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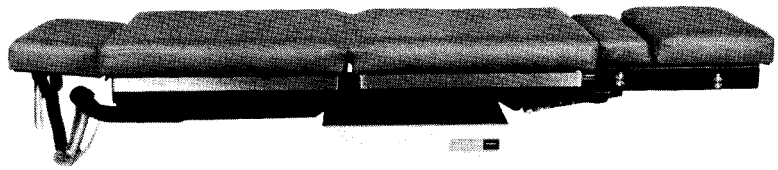
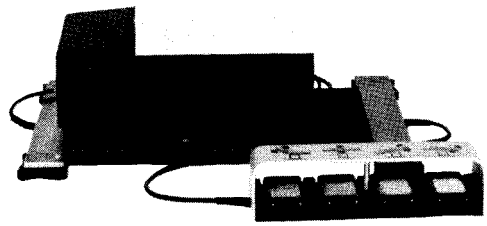
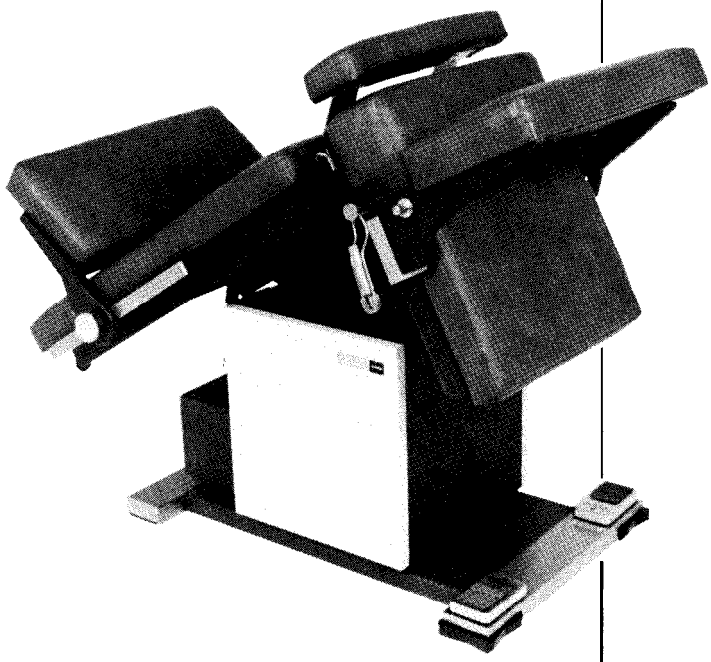
170,175
8500, 8600, 8700, 8800
SERIES
EXAMINATION
TABLES

MODELS 170, 175
MODELS 8500, 8510
MODEL 8525
MODELS 8550, 8560
MODELS 8600, 8610
MODELS 8700, 8710
MODELS 8800, 8825







SERVICE
MANUAL

003-0395-00

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DESCRIPTION OF SYMBOLS & NOTES IN MANUAL

The following symbols with related notes appear in this manual.

"Warning" notes alert the user of the manual when there is a possibility of personal injury.

"Caution" notes alert the user of the manual when there is a possibility of damage to the equipment.

NOTE)

"Notes" alert the user of the manual to pertinent facts and conditions.

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INTRODUCTION

This manual contains descriptions of how the table functions and information for adjusting and repairing the table to maintain it in good operating condition.

ROUTINE MAINTENANCE BY SERVICE PERSONNEL

It is recommended to check and perform the following routine maintenance when making a service call.

1. Check fluid level in the pump reservoir.
2. Check operation of the table electrical switches.
3. Listen for any abnormal sounds in the valves and cylinders.
4. Inspect the system for hydraulic fluid leakage.
5. Check operation of sections for any apparent drift.
6. Check rate of movement of the lift assembly.
7. Check the physical condition of electrical supply cords and plugs.
8. Check operation of rotational lock/release mechanism on models with rotation feature.
9. Check the head rest locking devices.
10. Check the manually operated accessory locks.
11. Check leg section for detent locking action at all positions.
12. Check that total system chassis risk current does not exceed 100 microamperes.
13. Inspect anchoring devices on models with rotation feature to ensure the table is securely anchored to the floor.

TOOLS & SUPPLIES

It is suggested that the following tools and supplies be carried by service personnel.

- 3/8″ ratchet with 3″, 5″, and 6” extensions, and swivel adapter
- Open end wrenches, Set, 5/16″ to 3/4″
- Allen wrenches, Set 3/32″ to 5/16″
- Screwdriver 12” long, 3/16″ blade
- Clip ring insertion tool for hydraulic mounting pin
- 8” and 12” long pieces of 2” x 4” wooden blocks
- 7/8″ Deep Socket Wrench
- Socket Wrenches, Set 7/16″ to 3/4″
- 2-C” clamps, 4” size
- Absorbent pads for fluid spillage
- Hydraulic fluid (Sybron or international [ENGLER] specification)
- Parker Seal O-ring lubricant
- Locktite H/S sealant for hydraulic fittings
- Locktite 271 sealant for plunger threads
- Adjustable wrench
- Pressure fitting caps

Special Tools

- Ammeter
- Spanner wrench for Rotation Unit shaft nut (N 507818)
- Pressure Gauge assembly O-1000 psi

REPLACEMENT PARTS

It is suggested that the following replacement parts be maintained in service stock.

QUANTITY	PART NO.	DESCRIPTION
5	507030	Fuse, T-630 mA/250V
5	507031	Fuse, T-4.0 A/250V
5	507343	Fuse, 1.5 A/115V
	501666	Circuit Breaker, 115V
2	501662	Relay
	501676	Transformer, 115V
	507978	Transformer 230V
2	500280	Coil, Solenoid 24 VAC
	500311	Valve, Flow Control
	500094	Cartridge, Pilot Check Valve
	500095	Cartridge, Valve Assembly
	500096	Cartridge, Directional Control
	500133	Spool, Assembly
	507924	Valve, Rings Pressure Relief
2	501633	Switch, Toggle
8	223414	Ring, Retaining 1/2″
8	209641	Ring, Retaining 3/8″
8	501690	Ring, Retaining 7/16″
	500287	Back/Leg Hydraulic Cylinder
	500161	Lift Hydraulic Cylinder
	500286	Tilt Hydraulic Cylinder
3	501609	Tie, Cable
	508011	Switch Package, Leg
	508012	Switch Package, Back
	501847	Capacitor, 115V
	507926	Capacitor, 230V
2	507279	Insulator, Capacitor
2	507371	Insulator, Capacitor
	507932	Switch I/O (230V)

NOTES

GENERAL

The 175, 8500 Series Universal Examination Table is designed for universal office use. The table top consisting of the Head rest, Back section, Seat section and Leg section can be moved to a continuous horizontal surface or moved individually for positioning a patient.

OPERATING CONTROLS & COMPONENTS

Item numbers referred to in the text that follows identify the controls and components in Figure 1.

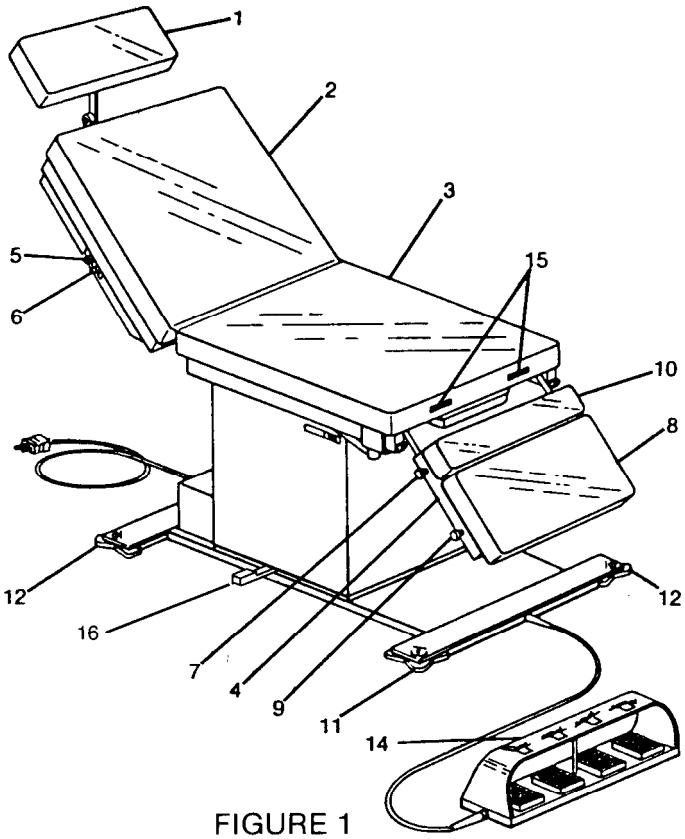


FIGURE 1

Head Rest

The headrest (item 1) is manually positioned and locked in position with clamping devices in the headrest post and yoke assembly.

Switches on Back Section

Two manually operated electrical switches are located on each side of the back section (item 2). The two switches toward the head end of the table (item 5) operate the back section. The two switches (item 6) toward the leg section operate the Leg Section (item 4).

Manually Operated Leg Section Components

Leg Section

The leg section can be positioned by switch control anywhere from horizontal to vertical.

The leg section can also be extended to three incremental locations. The release knobs (item 7), one on each side, must be pulled out to release the leg section for extension. The release knobs need not be pulled out to retract the leg section.

The outer end of the leg section (item 8) can be raised perpendicular to the leg section frame to be used as a knee rest when the leg section is in the vertical position. It locks automatically at the knee rest position. Release knobs (item 9), one on each side, must be pulled out to release it.

The thigh support cushion (item 10) on the leg section can be transferred to the end of the seat section (item 15) for patient support, when in the knee rest position.

Foot Switches

The seat section (item 3) can be tilted or moved up and down by means of electrical switches mounted at diagonal corners of the table base plate. Two foot switches (items 11) control table tilting. Two foot switches (items 12) control table elevation.

Portable Foot Control (Optional)

A Portable Foot Control (item 14) is available for connection at the table base plate to provide a remote control for table tilting, elevation, Back section, and Leg section movements.

Rotation Lock/Release Lever

A lock/release lever (item 16) mounted on the side of the lift structure at the base locks and releases an optional factory installed rotational device that permits rotating the table 180° clockwise or counterclockwise.

DRAIN PAN/CARRIAGE ASSEMBLY

The removable standard size drain pan, and carriage assembly is located under the seat section of the table. The carriage can be pulled forward to use or to remove the drain pan when the leg section of the table is in the down position.

WARNING

Drain pan/carriage assem bly must be in stored position when oper- a ting leg section to prevent damage to equipment and injury to personnel.

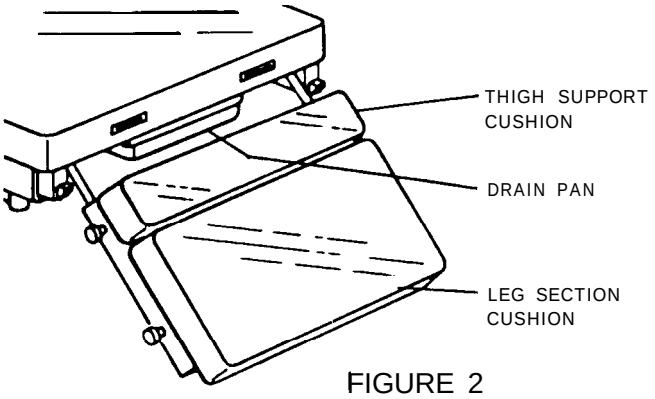


FIGURE 2

GENERAL

The 170, 8700 Series Table is designed so that the table top consisting of the Head rest, Seat section and Leg section can be moved to a continuous horizontal surface or moved individually for positioning a patient.

OPERATING CONTROLS & COMPONENTS

Item numbers referred to in the text that follows identify the controls and components in Figure 3.

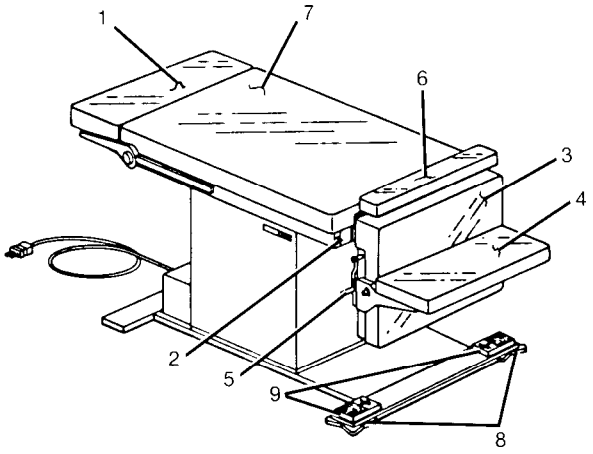


FIGURE 3

Head Rest

The headrest (item 1) is manually positioned and locked in position with clamping devices in the bracket assembly.

Switches on Seat Section

Two manually operated electrical switches are located on the end of the seat section (item 2). The two switches operate the Leg Section (item 3).

Leg Section

The leg section (item 3) can be positioned by switch control anywhere from horizontal to vertical.

Knee Rest

The knee rest (item 4) can be assembled to the mounting plates on the leg section (item 3). The knee rest can be adjusted for height by turning the hand crank (item 5).

Abdominal Support

The abdominal support (Item 6) can be assembled to the mounting brackets on tne foot end of the Table seat section (item 7).

Foot Switches

The seat section (item 7) can be tilted or moved up and down by means of electrical switches mounted at the corners of the table base plate. Two foot switches (items 8) control table tilting. Two foot switches (items 9) control table elevation.

GENERAL

The 8800 Series Table is designed so that the table top consisting of the Back section, Seat section and Leg section can be moved to a continuous horizontal surface or moved individually for positioning a patient.

OPERATING CONTROLS & COMPONENTS

Item numbers referred to in the text that follows identify the controls and components in Figure 4.

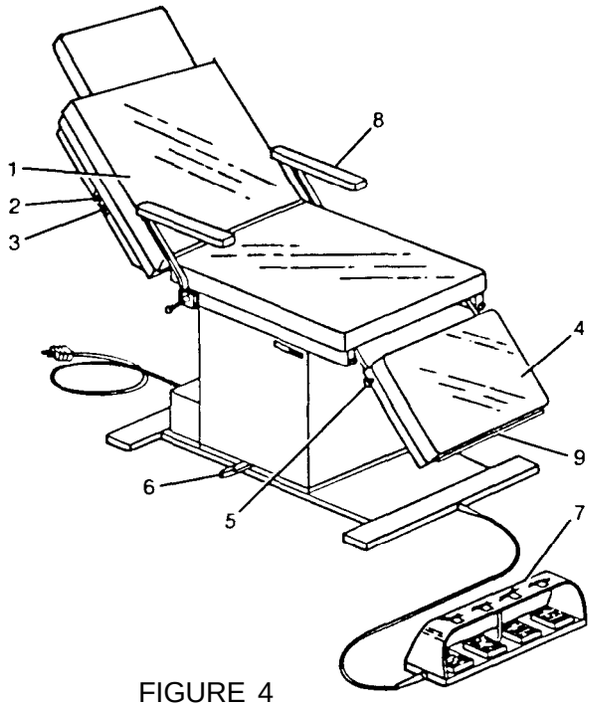


FIGURE 4

Switches on Back Section

Two manually operated electrical switches are located on each side of the back section (item 1). The two switches toward the head end of the table (item 2) operate the back section. The two switches (item 3) toward the leg section operate the Leg Section (item 4).

Manually Operated Leg Section Components

Leg Section

The leg section can be positioned by switch control anywhere from horizontal to vertical.

The leg section can also be extended to three incremental locations. The release knobs (item 5), one on each side, must be pulled out to release the leg section for extension. The release knobs need not be pulled out to retract the leg section.

Rotation Lock/Release Lever

A lock/release lever (item 6) mounted on the side of the lift structure at the base locks and releases an optional factory installed rotational device that permits rotating the table 180" clockwise or counterclockwise.

Portable Foot Control

A Portable Foot Control (item 7) controls table tilting, elevation, Back section, and Leg section movements.

Arm Rests

The arm rests (item 8) on either side of the Table can be released and swung down out of the way or locked in the upright position for patient use.

Debris Tray & Carriage

The carriage (item 9) that supports the removable debris tray can be pulled out to use the tray or returned to thestored position under the leg section when not being used.

POWER PACK ASSEMBLY

Numerical designations with component headings identify the components in Figure 5.

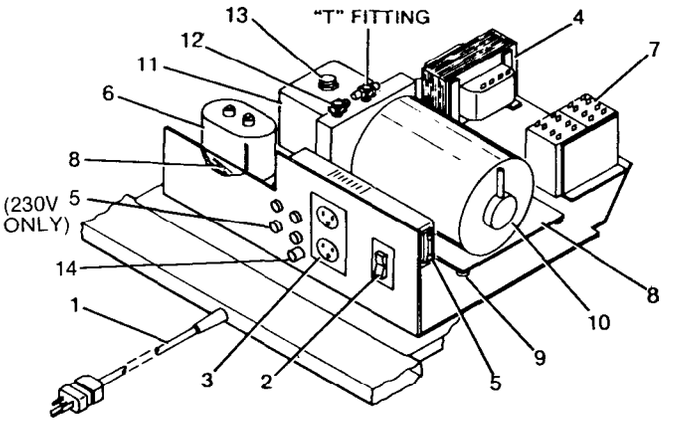


FIGURE 5 (115V SHOWN)

1. **Electrical Power Supply Cord -** The electrical supply cord provides the power supply for operating the table.
2. **ON/OFF(1/0) Switch -** The switch opens and closes the circuit to the table operating components. If table has 115 volt power supply, the switch is illuminated at the ON position.
3. **115 Volt Duplex Receptacle -** A duplex receptacle is provided next to the switch, on tables with 115 Volt power supply only, for connection of accessories. Not supplied with 230V tables.

4. **Transformer -** A transformer is located at the left rear of the Power Pack. It converts the power supply to 24 volts.

5. **Circuit Breaker/Fuses -** Tables with 115V power supply have a combination circuit breaker ON/OFF switch, and an external 1-1/2 Amp slow-blow fuse in the transformer primary circuit to protect the transformer. Tables with 230V power supply have two 250V, T 4.0 A fuses in the circuit before the I/O switch, and two 250V, T 630 mA fuses in the transformer primary circuit to protect the transformer.

6. **Capacitor -** A motor capacitor is mounted at the left of the electrical switch.

7. **Relays -** The two relays mounted to the right of the transformer process the signal from control switches to the motor for start-up. The relays also provide the logic to prevent cross-control of switches. When a switch is pushed to initiate a table motion, the movement of any other switch for the opposite direction is not recognized until the previously pushed switch has been released.

8. **Insulation Sheets -** To prevent electrical current leakage to the power pack frame from the motor or capacitor, insulation sheets are provided.

9. **Motor Rubber Shock Mounts** -The motor is installed with rubber shock mounts to insulate against electrical current leakage and control vibration.

10. **Pump Motor -** The electric motor operates the hydraulic pump. The motor turns clockwise (viewed from the end opposite the pump).

11. **Hydraulic Pump -** The hydraulic pump connected to the motor contains a pressure relief valve, an internal oil reservoir, and strainer.

12. **Hydraulic Pump Fittings -** Hoses connected to the two hose fittings on the hydraulic pump provide pressure to and return from the hydraulic valve manifold mounted at the top of the lift structure. The pressure fitting is a T connection, one end of which is capped, the other end is used to connect the hydraulic hose to the manifold. The capped end provides a connection for a pressure gauge when pressure readings are to be observed.

13. **Pump Reservoir Plug** -The pump reservoir plug is a fill/vent/dipstick/plug. The line on the dipstick indicates the oil level in the reservoir. Unscrewing the plug two full turns from the tightened position provides required reservoir ventilation. Hex shaped fill plug is permanently vented.

14. For 230V tables, an external ground point for auxiliary equipment is provided.

LIFT MECHANISM

Numerical designations with component headings identify the components in Figure 6.

The table elevating mechanism operates with a scissors action when the lift cylinder is extended to raise the table or retracted to lower the table.

1. **Links -** Six links, connected with bolts and bearings, provide the scissors action.

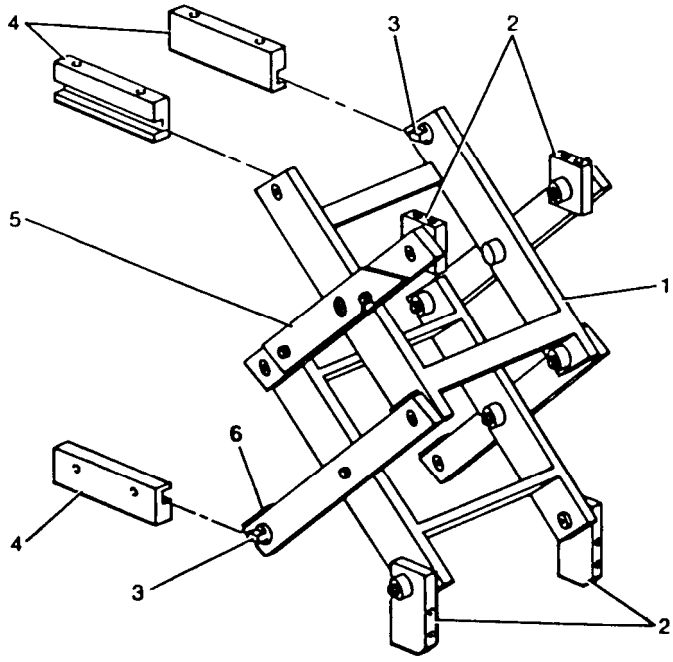


FIGURE 6

2. **Link Mounting Blocks -** The link assembly is secured at the bottom and top with mounting blocks. The blocks are located at the end of the links toward the foot of the table.
3. **Sliding Pads** -Sliding pads are mounted on the ends of the top and bottom links toward the head of the table.
4. **Slide Pad Guides -** Guides mounted at the top and bottom of the lift structure toward the head of the table provide channels in which the slide pads move, during lift action.
5. **Safety Link Locking Bar -** When properly assembled, the safety link locking bar prevents the lift structure from collapsing when hydraulic lines are disconnected for servicing the lift mechanism and lift structure.
6. **Link Stops -** Plastic link stops mounted on the top surface of the lower links limit the link assembly action in the retracted position.

HYDRAULIC VALVE MANIFOLD

The hydraulic valve manifold controls the flow of hydraulic fluid from the pump to the hydraulic cylinders for extending and retracting the cylinder shafts. The flow of fluid is directed through the manifold solenoid operated valves to the cylinders and returned to the pump. The solenoid valves open and close, when energized by table control switches, to direct the flow of fluid to respective hydraulic cylinders for table movements. The electrical system permits only one cylinder control to function at a time.

Check valves within the manifold for each cylinder prevent cylinders from drifting downward under load.

HYDRAULIC CYLINDERS

Four hydraulic cylinders in thesystem provide movements of the table. The lift cylinder raises and lowers the table. The leg section cylinder raises and lowers the leg section. the back section cylinder raises and lowers the back section. The tilt cylinder tilts the table top to the Trendelenburg (head end down) position.

FLOW CONTROL VALVE

A flow control valve, located on the top of the manifold, controls the flow of hydraulic fluid from the lift cylinder for regulating the speed at which the table is lowered.

The following is a description of how the table functions electrically and hydraulically. The text is referenced to the schematics that follow the text. The components are referenced to the line numbers in the left and right margins of the electrical and hydraulic schematics&d identified in the text with a numerical line designator preceeded by a letter, E for an electrical component or H for a hydraulic component.

Examples:

(E*20) indicates the line number on which Solenoid Valve 4, **SOL** 4 appears on the electrical schematic.

(H*65) indicates the line number on which Solenoid Valve 4, the Operating Solenoid and the Tilt Cylinder appear on the hydraulic schematic.

SEQUENCE OF OPERATION

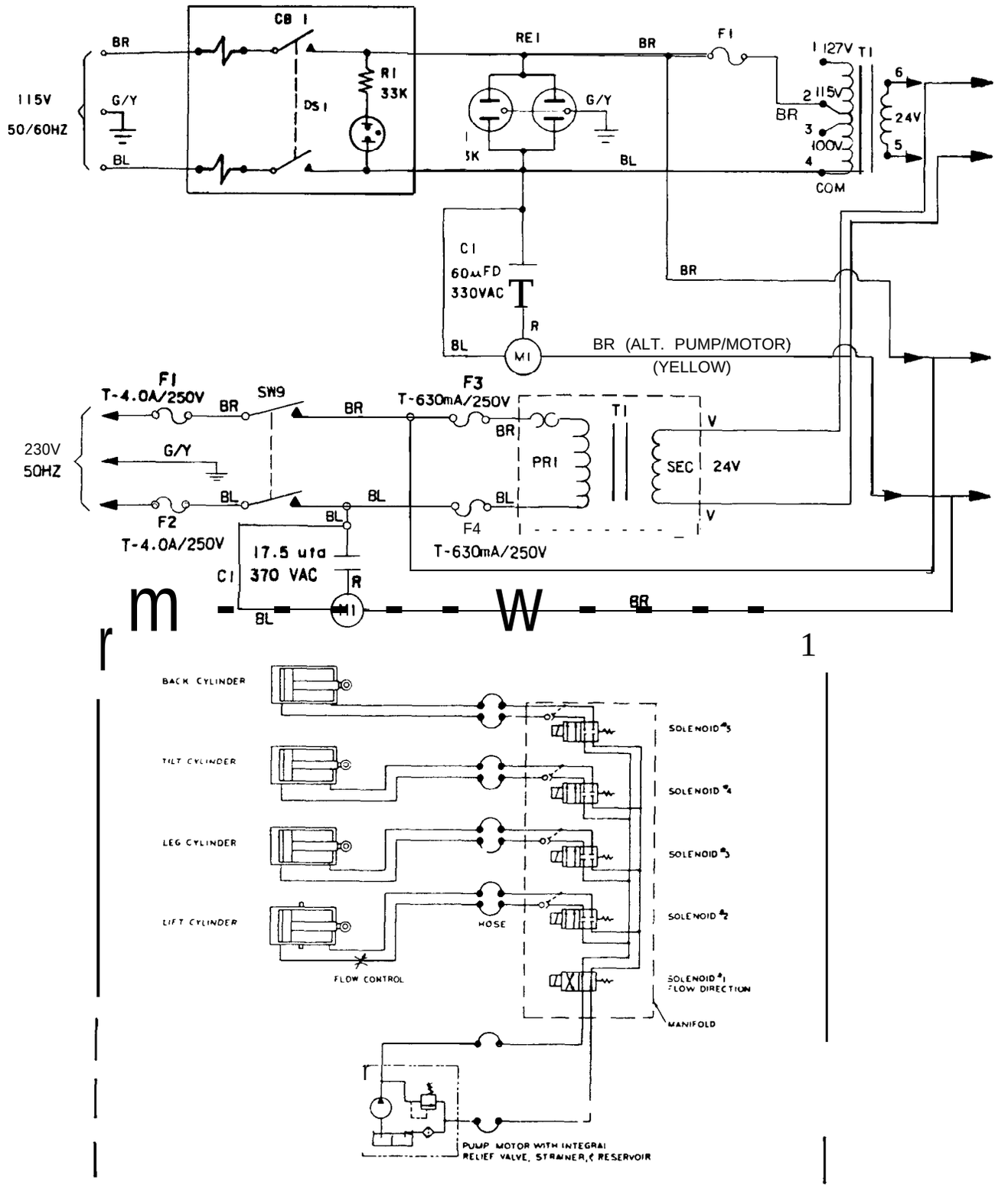
DESIRED MOTION	STARTING ACTION	FUNCTION
ENERGIZE TABLE	Connect 115V electrical supply cord. Depress ON/ OFF switch to ON.	The supply circuit is closed thru circuit breaker **CB1** (E*10), energizing pilot light **DS1** (E*10) and receptacle **RE1** (E*10). The circuit is also closed thrufuse **F1** (E*5) energizing transformer **T1** (E*10) which provides24 volts for the table control circuit.
	Connect 230V electrical supply cord. Depress I/O switch to I.	The supply circuit is closed thru fuses **F1** and F2 (E*35 and 45), I/O switch SW9 (E*35 and 45), and fuses F3 and F4 (E'35 and 45), energizing transformer **T1** (E*40) which provides 24 volts for the table control circuit.
ELEVATE TABLE	Push foot switch to raise table.	The 24 volt circuit from transformer **T1** (E*10) is closed thru lift foot switch (E*45) or (E*85), energizing solenoid valve SOL2 (E*30) and relay **K1** (E*55). The power supply circuit closes thru the contacts of relays **K1** (E*45) and K2 (E*30), energizing the pump motor **MI** (E*40)(H*80) and capacitor **CI** (E*35) to supply hydraulic pressure. Hydraulic fluid flows from the pump thru the direction control solenoid valve **SOL1** (H*75) and solenoid valve SOL2 (H*70) to the cap end of the lift hydraulic cylinder (H*70), extending the cylinder rod to raise the table. Hydraulic fluid in the rod end of the cylinder flows back thru solenoid valves SOL2 (H'70) and **SOL1** (H*75) to the pump reservoir (H'85).
	Release foot switch to stop action.	When the lift foot switch (E'45) or (E'85) is released, electrical circuitsopen to the operating components and solenoid valve SOL2 (E*30)(H*70) is closed. Check valve for solenoid valve SOL2 is also closed, maintaining cylinder extension.
LOWER TABLE	Push foot switch to lower table.	The 24 volt circuit from the transformer **T1** (E*10) or (E*40) is closed thru lift foot switch (E'45) or (E'85). energizing direction control solenoid valve **SOL1** (E*35), solenoid valve SOL2 (E*30) and relay K2 (E'30). Energized solenoid valve **SOL1** (E*35) directs the flow of hydraulic fluid to the rod end of the lift hydraulic cylinder The power supply circuit closes thru the contacts of relays **K1** (E'45) and K2 (E*30), energizing the pump motor **MI** (E*40)(H*80) and capacitor **CI** (E*35) to supply hydraulic pressure. Hydraulic fluid flows from the pump thru the firection control solenoid valve **SOL1** (H*75) and solenoid valve SOL2 (H*70) to the rod end of the lift hydraulic cylinder, retracting the rod to lower the table. Hydraulic fluid in the cap end of the cylinder flows back thru solenoid valves SOL2 (H'70) and **SOL1** (H*75) to the pump reservoir (H*85).
	Release foot switch to stop action.	When the lift foot switch (E'85) or (E'45) is released, electrical circuits open to the operating components, and solenoid valve **SOL2** (E*30)(H*70) is closed Check valve for solenoid valve SOL2 is also closed, maintaining cylinder extension.
TILT TABLE (Foot end upward).	Push foot switch to tilt table. (Foot end upward).	The 24 volt circuit from the transformer **T1** (E*10) or (E*40) is closed thru tilt foot switch (E*25) or (E*70), energizing solenoid valve SOL4 (E*20) and relay **K1** (E*55) The electrical power supply circuit closes thru relays **K1** (E*55) and K2 (E*30), energizing the pump motor **MI** (E*40(H*80) and capacitor **CI** (E*35) to supply hydraulic pressure. Hydraulic fluid flows from the pump thru the direction control solenoid valve **SOL1** (H'75) and solenoid valve SOL4 (H*65) to the cap end of the tilt cylinder (H*65), extending the cylinder rod to tilt the table upward. Hydraulic fluid in the rod end of the cylinder flows back thru solenoid valves SOL4 (H*65) and **SOL1** (H*75) to the pump reservoir.

SEQUENCE OF OPERATION (Cont'd)

DESIRED MOTION	STARTING ACTION	FUNCTION
	Release foot switch to stop action.	When the tilt foot switch (E*25) or (E*70) is released, electrical circuitsopen to the operating components, and solenoid valve SOL4 (E*20)(H*65) is closed. Check valve for solenoid valve SOL4 (H*65) IS also closed, maintaining cylinder extension.
TILT TABLE (Foot end downward).	Push foot switch to tilt table. (Foot end downward).	The 24 volt circuit from the transformer **T1** (E*10) or (E'40) is closed thru tilt foot switch (E*25) or (E*70), energizing solenoid valve **SOL1** (E*35), solenoid valve SOL4 (E*20), and relay K2 (E*30). Energizing solenoid valve **SOL1** (E'35) directs the flow of hydraulic fluid to the rod end of the tilt hydraulic cylinder. The power supply circuit IS closed thru the contacts of relays **K1** (E*45) and K2 (E*30), energizing the pump motor **MI** (E*40)(H*80) and capacitor **CI** (E*35) to supply hydraulic pressure. Hydraulic fluid flows from the pump thru flow direction control valve **SOL1** (H'75) and solenoid valve **SOL4** (H*65) to the rod end of the tilt hydraulic cylinder, retracting the rod to tilt the table downward. Hydraulic fluid in the cap end of the cylinder flows back thru solenoid valve SOL4 (H*65) and **SOL1** (H*75) to the pump reservoir (H*85).
	Release foot switch to stop action.	When the tilt foot switch (E'25) or (E*70) is released, electrical circuitsopen to the operating components, and solenoid valve SOL4 (E*20)(H*65) IS closed. Check valve for solenoid valve SOL4 (E*65) is also closed, maintaining cylinder extension.
BACK SECTION (Tilt Upward).	Push foot switch or press hand switch upward to raise back section.	The 24 volt circuit from the transformer **T1** (E*10) or (E'40) is closed thru back foot switch (E*65) or back hand switch (E*15), energizing solenoid valve SOL5 (E*15) and relay **K1** (E*45). The power supply circuit is closed thru the contacts of relays **K1** (E*45) and K2 (E*30), energizing the pump motor **MI (E'40)** (H*80) and capacitor **CI** (E*35) to supply hydraulic pressure. Hydraulic fluid flows from the pump thru direction control solenoid valve **SOL1** (H'75) and solenoid valve **SOL5** (H*65) to the cap end of the back hydraulic cylinder (H*60), extending the rod end of the cylinder to raise the back section. Hydraulic fluid in the rod end of the cylinder flows back thru solenoid valve **SOL5** (H'60) and solenoid valve **SOL1** (H*75) to the pump reservoir (H'85).
	Release foot switch or hand switch to stop action.	When the back foot switch (E*65) or hand switch (E*15) is released, electrical circuits open to the operating components, and solenoid valve **SOL5** (H*65) is closed. Check valve for solenoid valve SOL5 (H'65) is also closed, maintaining cylinder extension.
BACK SECTION (Tilt Downward).	Push foot switch or press hand switch downward to lower back section.	The 24 volt circuit from the transformer **T1** (E*10) or (E'40) is closed thru back foot switch (E'65) or back hand switch (E*15), energizing direction control solenoid valve **SOL1** (E*35), solenoid valve **SOL5** (E*15), and relay K2 (E*30). Energizing solenoid valve **SOL1** (E'35) directs the flow of hydraulic fluid to the rod end of the back hydraulic cylinder. The power supply circuit is closed thru the contacts of relays **K1** (E'45) and K2 (E*30), energizing the pump motor **MI** (E*40)(H*80) and capacitor **CI** (E*35) to supply hydraulic pressure. Hydraulic fluid flows from the pump thru flow direction solenoid valve **SOL1** (H*75) and back solenoid valve SOL5 (E"60) to the rod end of the back hydraulic cylinder, retracting the rod to lower the back section. Hydraulic fluid in the cap end of the cylinder flows back thru solenoid valves **SOL1** (H*75) and SOL5 (H*60) to the pump reservoir (H*85).
	Release foot switch or hand switch to stop action.	When the back foot switch (E*65) or hand switch (E*15) is released, electrical circuits open to the operating components, and solenoid valve **SOL5** (H*65) is closed. Check valveforsolenoid valve **SOL5** (H*65) isalsoclosed, maintaining cylinder extension.
LEG SECTION [Tilt Upward).	Push foot switch or press hand switch upward to raise leg section.	The 24 volt circuit from transformer **T1** (E*10) or (E*40) is closed thru leg foot switch (E*75) or leg hand switch (E*35), energizing solenoid valve SOL3 (E*25) and relay **K1** (E"45). The power supply circuit is closed thru the contacts of relays **K1** (E'45) and K2 (E*30), energizing the pump motor **MI (E'40)** (H*80) and capacitor **CI** (E*35) to supply hydraulic pressure. Hydraulic fluid flows from the pump thru thedirection control solenoid valve **SOL1** (E & H*75) and solenoid valve SOL3 (H*70) to the cap end of the leg hydraulic cylinder, extending the rod end of the cylinder to raise the leg section. Hydraulic fluid in the rod end of the cylinder flows back thru solenoid valve **SOL3** (H'70) to the pump reservoir (H*85).

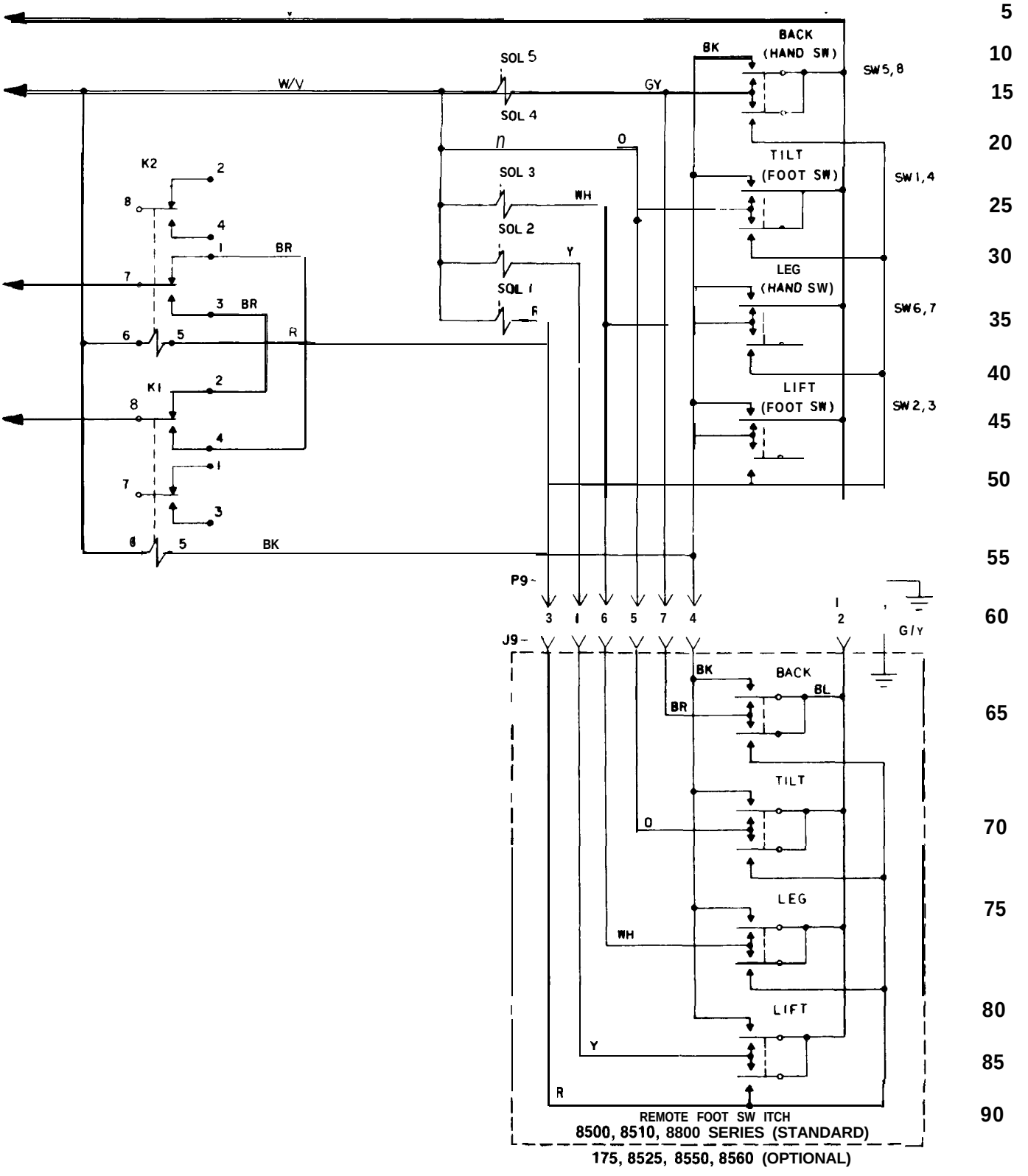
SEQUENCE OF OPERATION (Cont'd)

DESIRED MOTION	STARTING ACTION	FUNCTION
	Release foot switch or hand switch to stop action.	When the leg foot switch (E*75) or leg hand switch (E'35) is released, electrical circuits open to the operating components, and solenoid valve SOL3 (H*70) is closed. Check valve for solenoid valve SOL3 (H'70) is also closed, maintaining cylinder extension.
LEG SECTION (Tilt Downward).	Push foot switch or press hand switch downward to lower leg section.	The 24 volt circuit from transformer **T1** (E*10) or (E*40) is closed thru leg foot switch (E*75) or leg hand switch (E*35) energizing direction control solenoid valve **SOL1** (E*35), solenoid valve SOL3 (E*25), and relay K2 (E'30). Energizing solenoid valve **SOL1** (E*35) directs the flow of hydraulic fluid to the rod end of the leg hydraulic cylinder. The power supply circuit is closed thru contacts of relays **K1** (E*45) and K2 (E*30), energizing the pump motor **Ml** (E*40)(H*80) and capacitor **Cl** (E*35) to supply hydraulic pressure. Hydraulic fluid flows from the pump through the direction control solenoid valve SOL1 (H'75) and solenoid valve SOL3 (H*70) to the rod end of the leg hydraulic cylinder, retracting the rod to lower the leg section. Hydraulic fluid in the cap end of cylinder flows back through solenoid valves SOL3 (H*70) and **SOL1** (H*75) to the pump reservoir (H*85).
	Release foot switch or hand switch to stop action.	When the leg foot switch (E'75) or leg hand switch (E*35) is released, electrical circuits open to the operating components, and solenoid valve SOL3 (H*70) is closed. Check valve for solenoid valve SOL3 (H*70) is also closed, maintaining cylinder extension



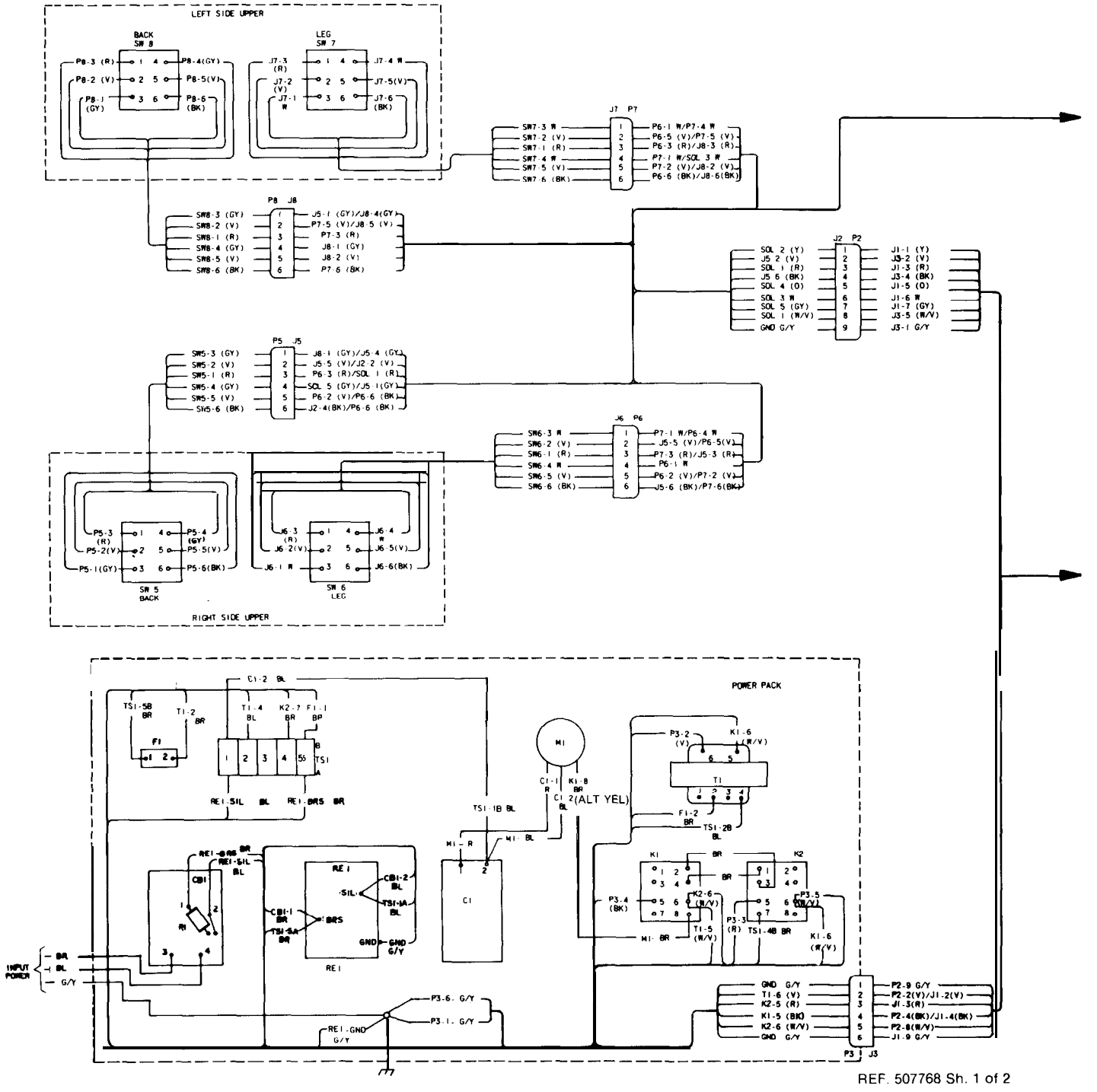
HYDRAULIC SCHEMATIC (115V & 230V)
(Voltage Range 115V Tables 100 to 127 volts)

REF 507947 (230V)
REF 507354 (115V)
REF 507365 (Hydraulic)



ELECTRICAL SCHEMATIC (115V & 230V)

REF 507947 (230V)
REF 507354 (115V)
REF 507365 (Hydraulic)



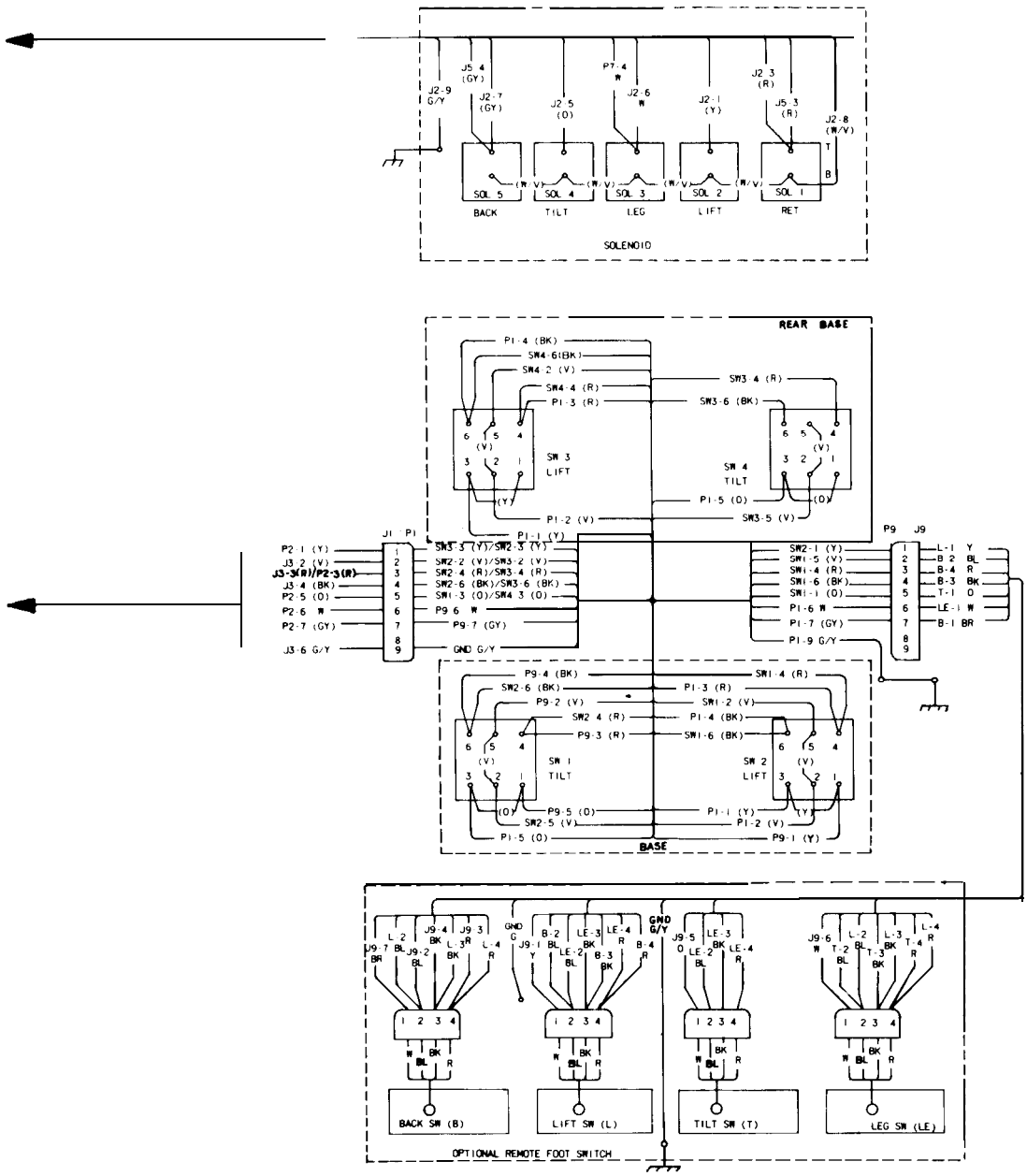
ELECTRICAL DIAGRAM (115V)

NOTE: 1) A WIRE DESIGNATION AT A COMPONENT IS TO INDICATE WHERE IT IS FROM AND THE WIRE COLOR WHEN WIRE IS MARKED WITH COLOR CODE IT IS SHOWN IN PARENTHESIS. WHEN WIRE IS ACTUAL COLOR, NO PARENTHESIS ARE SHOWN.

EXAMPLE: ____TSI-2B____ = WIRE FROM TERMINAL STRIP NO. 1. SCREW NO. 2. B SIDE.

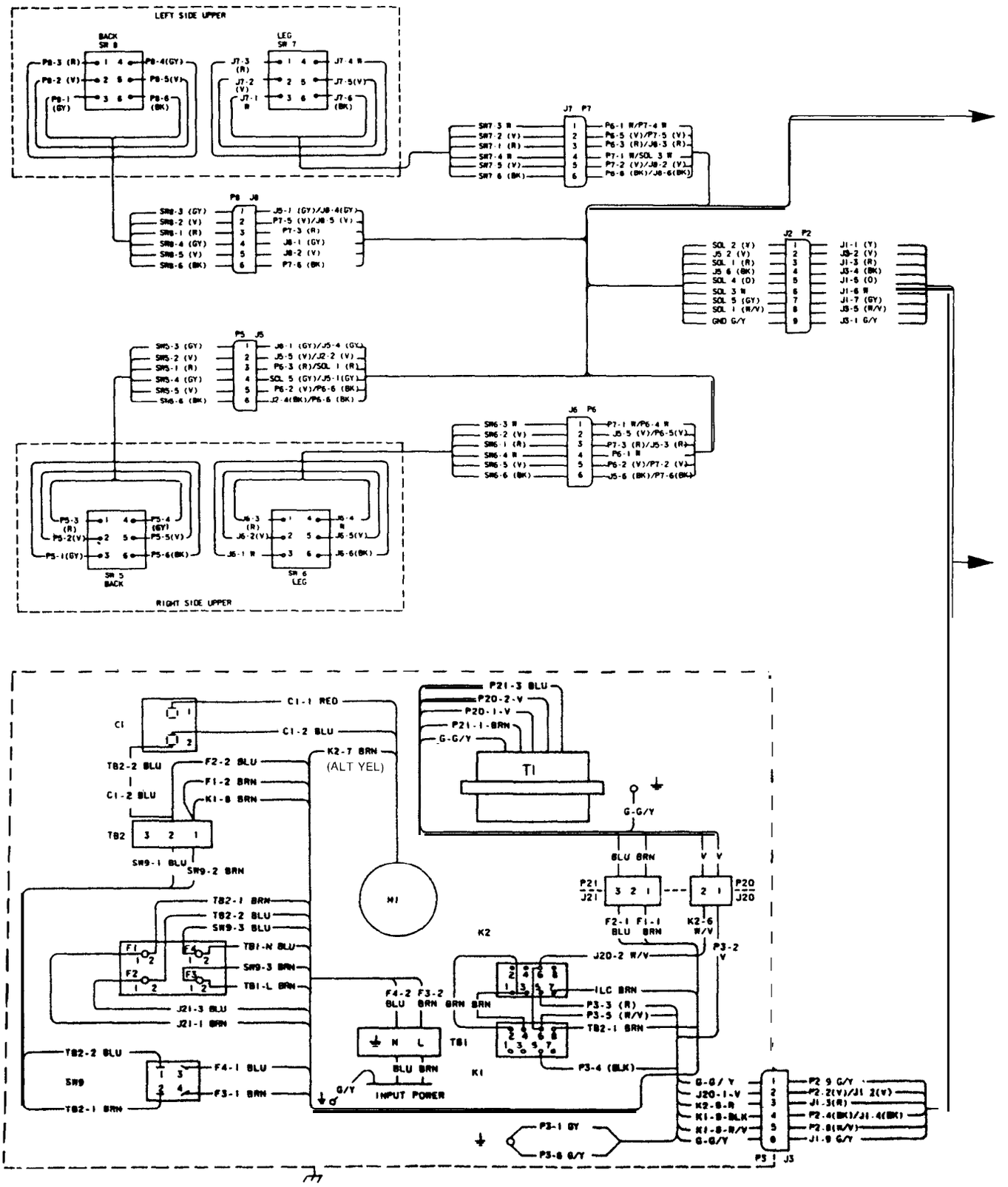
(BK) ____ = WHITE WIRE STAMPED BLACK.

__ BL ____ = ACTUAL WIRE COLOR IS BLUE.



REF 507768 Sh 2 of 2

ELECTRICAL DIAGRAM (115V)



REF. 509035 Sh 1 of 2

ELECTRICAL DIAGRAM (230V)

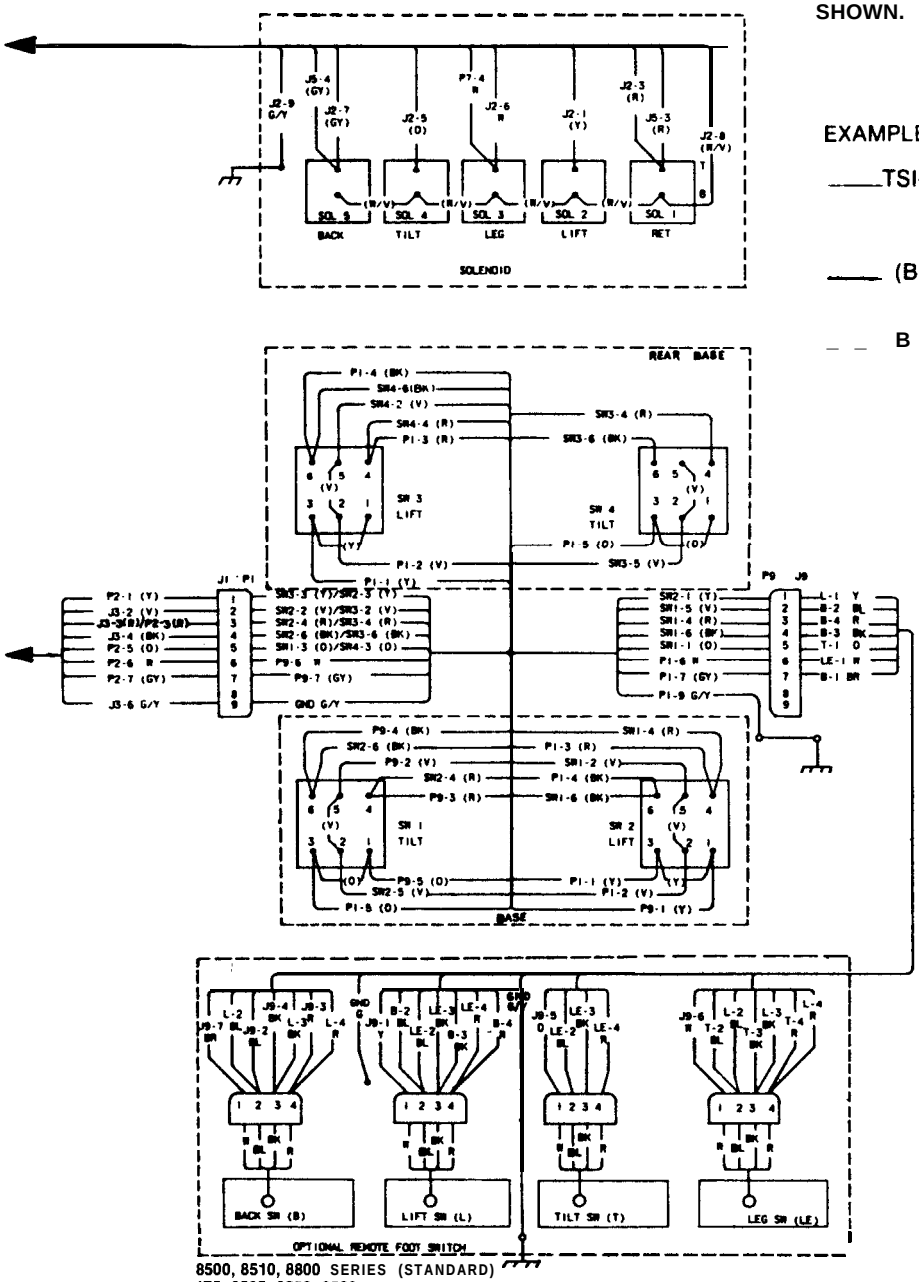
NOTE: 1) A WIRE DESIGNATION AT A COMPONENT IS TO INDICATE WHERE IT IS FROM AND THE WIRE COLOR. WHEN WIRE IS MARKED WITH COLOR CODE IT IS SHOWN IN PARENTHESIS. WHEN WIRE IS ACTUAL COLOR, NO PARENTHESIS ARE SHOWN.

EXAMPLE:

____TSI-2B____ = WIRE FROM TERMINAL STRIP NO. 1. SCREW NO. 2. B SIDE.

____ (BK) ____ = WHITE WIRE STAMPED BLACK.

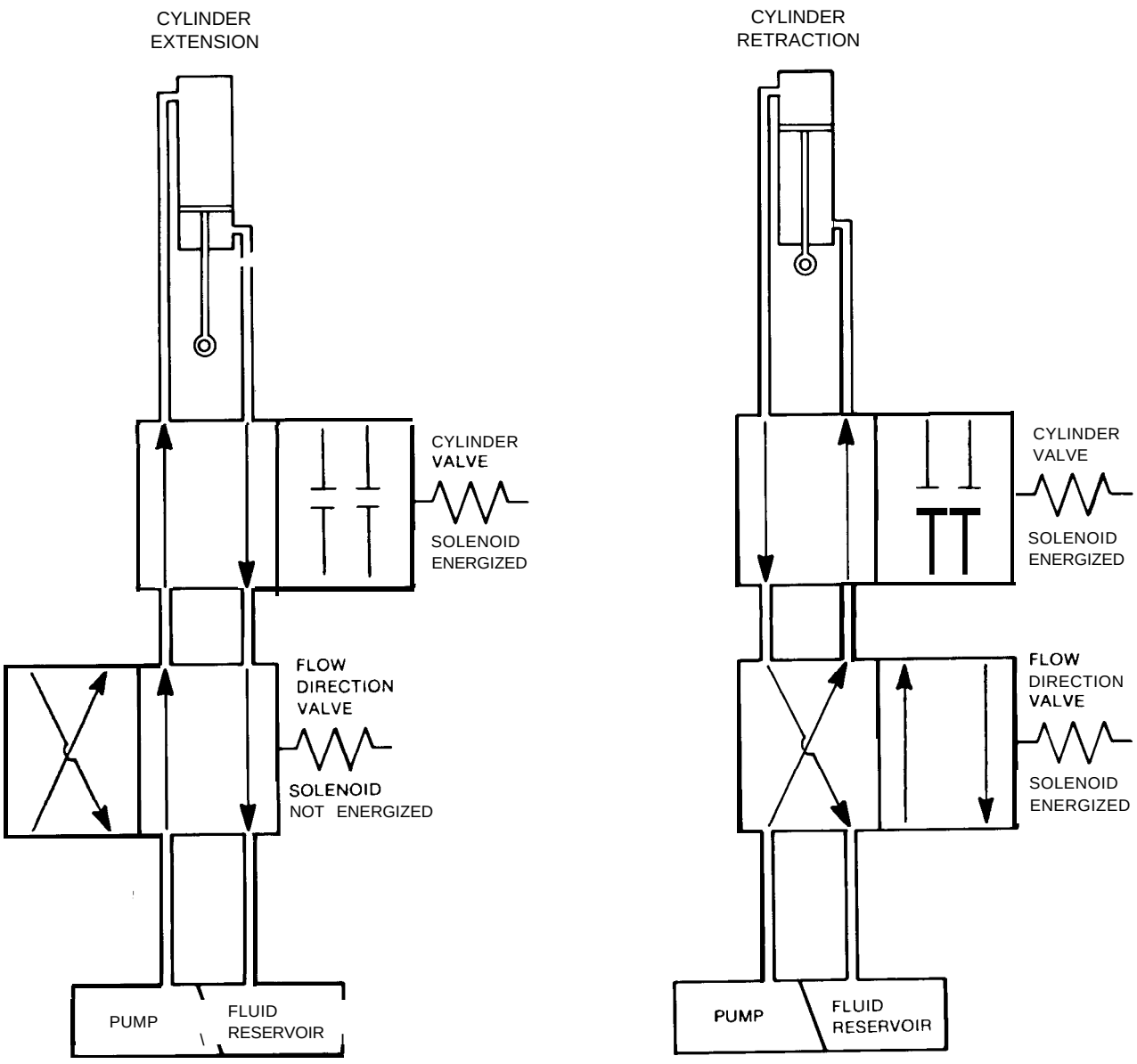
_ _ B L ____ = ACTUAL WIRE COLOR IS BLUE.



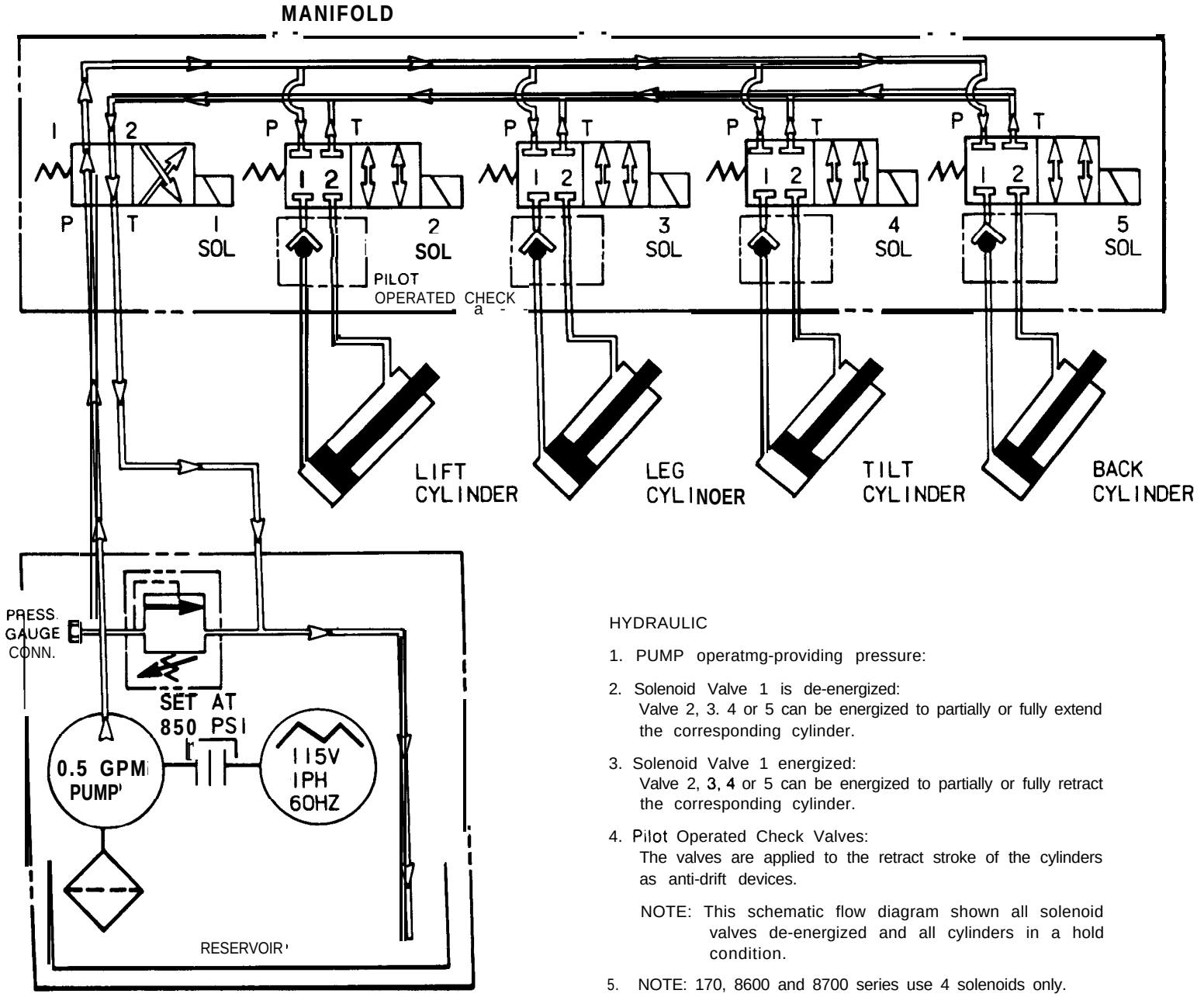
8500, 8510, 8800 SERIES (STANDARD)
175, 8525, 8550, 8560 (OPTIONAL)

REF. 509035 Sh. 2 of 2

ELECTRICAL DIAGRAM (230V)



HYDRAULIC FLUID FLOW CONTROL



HYDRAULIC POWER UNIT

HYDRAULIC

1. PUMP operatmg-providing pressure:
2. Solenoid Valve 1 is de-energized:
   Valve 2, 3. 4 or 5 can be energized to partially or fully extend the corresponding cylinder.
3. Solenoid Valve 1 energized:
   Valve 2, 3, 4 or 5 can be energized to partially or fully retract the corresponding cylinder.
4. Pilot Operated Check Valves:
   The valves are applied to the retract stroke of the cylinders as anti-drift devices.

   NOTE: This schematic flow diagram shown all solenoid valves de-energized and all cylinders in a hold condition.

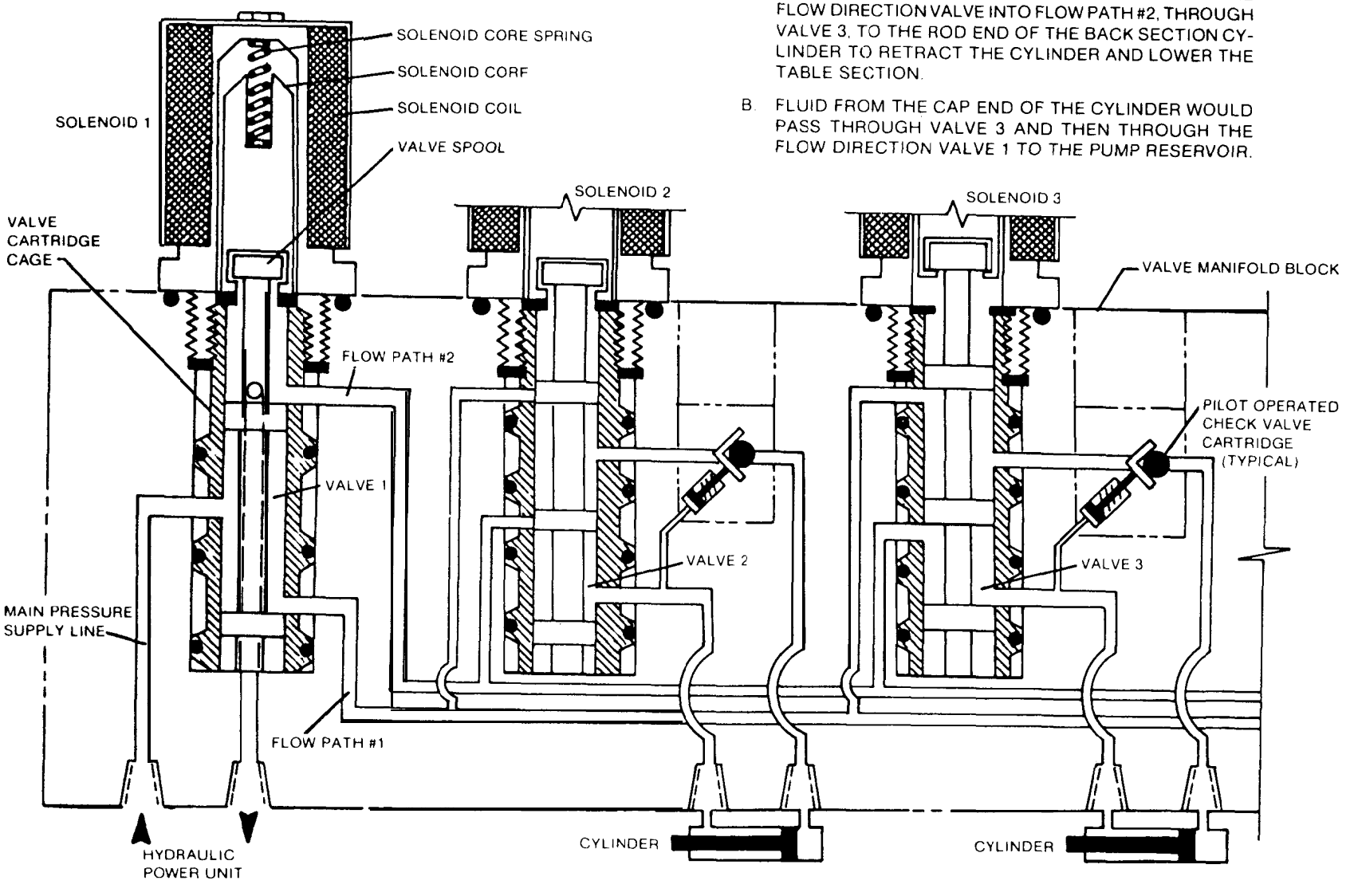
5. NOTE: 170, 8600 and 8700 series use 4 solenoids only.

1. SOLENOIDS 1 & 2 ARE NOT ENERGIZED.
2. FLOW DIRECTION VALVE 1 PERMITS PASSAGE OF FLUID INTO PATH #1, THROUGH VALVE 3, WHICH IS OPENED BY SOLENOID 3, TO THE CAP END OF THE CYLINDER TO EXTEND THE CYLINDER AND RAISE THE TABLE SECTION.
3. FLUID FROM THE ROD END OF THE CYLINDER PASSES THROUGH VALVE 3 AND THE FLOW DIRECTION VALVE 1 TO THE PUMP OIL RESERVOIR.

NOTE: ENERGIZING SOLENOID 1 WOULD MOVE THE FLOW DIRECTION VALVE REVERSING THE MOVEMENT OF HYDRAULIC FLUID IN THE MANIFOLD.

A. FLUID FROM THE PUMP WOULD PASS THROUGH THE FLOW DIRECTION VALVE INTO FLOW PATH #2, THROUGH VALVE 3, TO THE ROD END OF THE BACK SECTION CYLINDER TO RETRACT THE CYLINDER AND LOWER THE TABLE SECTION.

B. FLUID FROM THE CAP END OF THE CYLINDER WOULD PASS THROUGH VALVE 3 AND THEN THROUGH THE FLOW DIRECTION VALVE 1 TO THE PUMP RESERVOIR.



HYDRAULIC MANIFOLD DIAGRAM

TROUBLE ANALYSIS

The trouble analysis chart that follows outlines the possible causes and remedies for problems encountered during operation. For complete check-out information, refer to Section 2, "Sequence of Operation" in this manual. For remedial action, refer to Section 4, "Adjustments and Repair". For maintenance instructions refer to the Routine Maintenance under General Information in Section 1.

INDEX	TROUBLE	PROBABLE CAUSE	REMEDY
A	ON/OFF switch bulb does not glow (Table with 115V electrical power supply).	1. Circuit breaker tripped. 2. Defective circuit breaker. 3. Table electrical supply cord disconnected or damaged. 4. Bulb burned out. 5. Defective resistor.	1. Reset circuit breaker. 2. Replace switch assembly. 3. Connect or replace if required. 4. Replace switch assembly. 5. Replace switch assembly.
	No electrical power thru I/O switch (Table with 230V electrical power supply).	1. Table electrical supply cord not connected or damaged. 2. Main circuit fuse blown. 3. Defective switch.	1. Connect or replace if required. 2. Check both fuses. Replace if required. 3. Replace switch.
B	Table motion switches do not operate.	1. Loss of table electrical power supply.	1. Refer to A above.
C	Table motion does not occur on any switch demand with electrical power available at the power pack. Motor does not start.	1. Disconnected or defective Relays. 2. Disconnected or defective capacitor. 3. Transformer fuse blown. 4. Disconnected or defective transformer. 5. Motor/Pump shaft seized.	1. Check and replace if required. 2. Check and replace if required. 3. Replace fuse. 4. Check and replace if required. 5. Replace Motor/Pump assembly.
D	Table motion does not occur on a specific switch.	1. Disconnected or defective switch wire. 2. Defective switch.	1. Push alternate switch for the desired motion. If table section moves, check switch and connect or replace wire assembly. 2. Replace switch.
E	Electrical plug-in accessory does not operate.	1. Disconnected or defective receptacle.	1. Check and replace if required.
F	Cylinder does not extend.	1. Defective Solenoid coil on cylinder valve. 2. Defective Solenoid valve cartridge. 3. Defective pilot check valve.	1. Check and replace if required. 2. Clean or replace if required. 3. Replace.
G	Cylinder does not retract.	1. Defective Solenoid coil on direction control valve. 2. Direction valve spool stuck in the extend position. 3. Defective Solenoid coil on cylinder valve. 4. Cylinder cartridge valve stuck in the closed position. 5. Defective pilot check valve.	1. Check and replace if required. 2. Check and replace if required. 3. Check and replace if required. 4. Check and replace if required. 5. Check and replace if required.
H	Cylinder does not maintain table position, table section drifts.	1. Hydraulic fluid leakage. 2. Solenoid valvesticking in manifold. 3. Faulty pilot check valve. 4. Internal cylinder fluid leakage.	1. Check hose connections, hoses and fittings. Replace hoses if required. 2. Check direction control valve and cylinder valve. Replace as required. 3. Check and replace if required. 4. Replace cylinder.

TROUBLE ANALYSIS

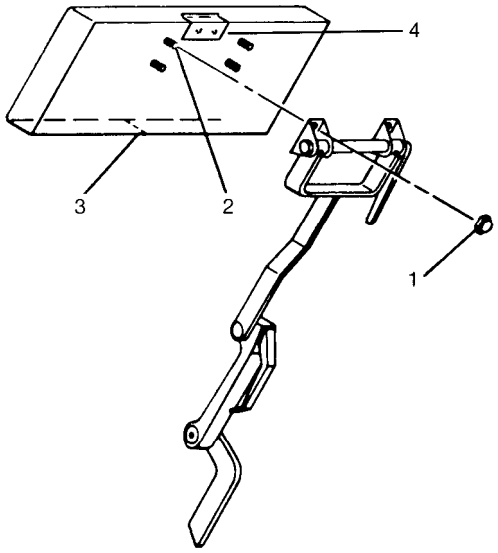
NDEX	TROUBLE	PROBABLE CAUSE	REMEDY
I	Cylinder action is slow with no apparent fluid leakage.	1. Defective capacitor. 2. Flow control valve requires adjustment. 3. Hydraulic hose crimped. 4. Motor/Pump speed too slow, shaft binding. 5. Pilot check valve sticking.	1. Check and replace if necessary. 2. Adjust valve. 3. Reposition hose to relieve condition. Replace hose if damaged. 4. Lubricate. Replace Motor/Pump assembly if required. 5. Check and replace if required.
J	"Noisy" Power Pack.	1. Power Pack cover improperly installed. 2. Defective pressure relief valve. 3. Defective Motor/Pump assembly.	1. Reposition Power Pack assembly and reassemble Power Pack cover. 2. Replace valve. 3. Replace assembly.
K	"Noisy" cylinder.	1. Internal cylinder fluid leakage. 2. Damaged cylinder rod. 3. Defective seals. Fluid leaking.	1. Replace cylinder. 2. Replace cylinder. 3. Replace cylinder.
L	Lift assembly does not move smoothly.	1. Slide pad guides out of alignment. 2. Worn slide pad. 3. Loose link assembly mounting block. 4. Loose cylinder mounting block. 5. Worn link bearing. 6. Defective lift cylinder.	1. Realign guides. 2. Replace slide pad. 3. Tighten bolts in mounting blocks. Use LOCKTITE 271 sealant. 4. Tighten bolts in mounting block. Use LOCKTITE 271 sealant. 5. Replace bearing except: If the cause isoneof the press fitted bearings. Replace the link assembly. 6. Replace the cylinder.
M	A switch in the Portable Foot Control does not produce the desired table motion.	1. Disconnected or defective switch wire. 2. Defective switch.	1. Push an alternate table mounted switch for the desired motion. If motion occurs, the cause is in the foot switch. Connect or replace the wire. 2. Replace the switch.
N	None of the switches on the Portable Foot Control operate.	Disconnected or damaged Portable Foot Control electrical power supply cord.	Check connector, electrical power supply cord, wire connections and indexes B, C, and D. Correct malfunctioning component.
0	Table rotation unit does not lock.	1. Locking lever out of position. 2. Worn brake pads.	1. Adjust by repositioning. 2. Replace brake assembly.
P	Table rotation is not smooth.	1. Rotation assembly column is loose.	1. Tighten nut on rotation shaft under the table base plate.

CUSHIONS — 175, 8500, 8800 SERIES

Articulating Head Rest Cushion

Removal

Remove the four cap nuts (item 1) from the studs (item 2) on back of cushion.



HEAD REST CUSHION

Replacement

Assure that edge seam (item 3) is toward the table and attach cushion with the four cap nuts. Be sure to transfer clip (item 4) to new cushion.

Back/Seat Section Cushion Assembly

The back section and seat section cushions are removed and replaced as a single assembly.

Removal

1. Tilt the table and remove thefourwing nuts from the underside of the seat section cushion.
2. Lower the table seat section.
3. Raise the back section.

Disconnect the tab/e electrical power supply cord to prevent electrical shock.

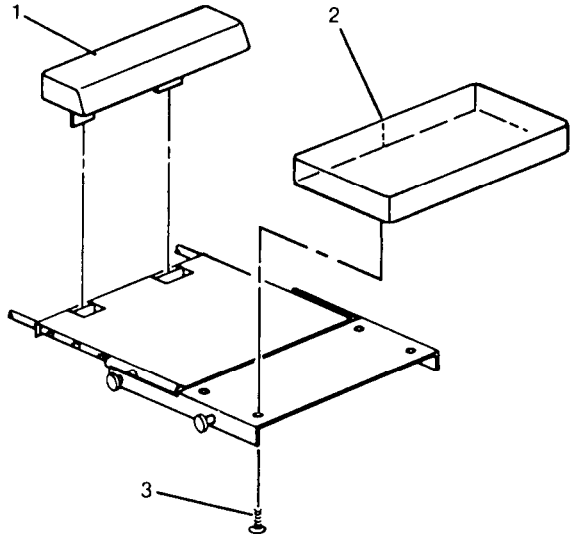
4. Remove the back section cover as outlined under Back Section Cover Removal on page 29, for access to the cushion securing nuts.
5. Remove the four wing nuts from the underside of the cushion.

Replacement

1. Secure the cushion assembly with four wing nuts under the seat section and four under the back section.
2. Replace back section cover, paper roll cover, roll of paper, and head rest.

Thigh Support Cushion Replacement

The thigh support cushion is not replaceable. Replace complete thigh support (item 1) as a unit.



THIGH SUPPORT/LEG SECTION CUSHION

Leg Section Cushion Replacement

Removal

1. Raise the outer end of the leg section to the locked position and remove the four flat head slotted screws (item 3) from the underside of the cushion.

Replacement

Assure that edge seam (item 2) is toward the head of the table.

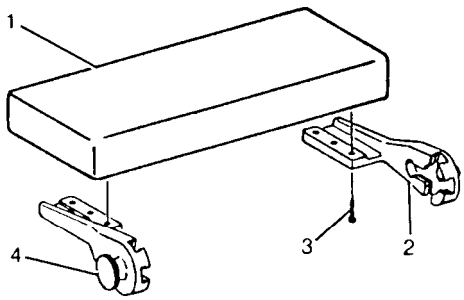
Attach the cushion with the four flat head slotted screws.

CUSHIONS — 170, 8700 SERIES

Head Rest Cushion

Removal

1. Remove the head rest from the table and turn it bottom side up for cushion replacement.
2. Disassemble the cushion (item 1) from the two support brackets (item 2) secured with threescrews(item3) througheach bracket.



HEAD REST CUSHION

Replacement

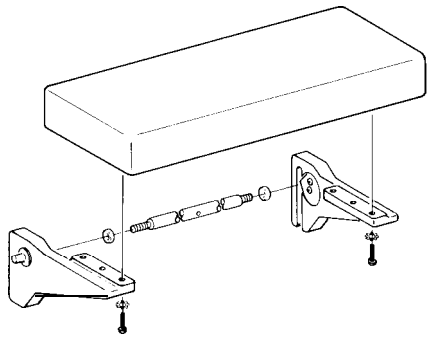
1. Assemble the brackets to the replacement cushion in reverse order of removal but do not tighten the securing screws.
2. Assemble the head rest, bottom side up for access to the screws, onto the accessory rails and tighten the locking-handwheels (item 4).
3. With the handwheels tightened for proper alignment, tighten the sixcushionsecuring screws.

Seat Section Cushion Replacement

1. Tilt the table for access to the four cushion retaining wing nuts on the underside of the table frame and remove the nuts.
2. Replace the cushion and assemble in reverse order of removal.

Knee Rest Cushion Replacement &Adjustment

Failure to follow adjustment instructions could result in disengagement of knee rest cushion assembly from table and result in personal injury to patient and/or operator.



KNEE REST CUSHION

1. Raise leg section to horizontal position and tilt table to full Trendlenburg position.
2. Remove six flat head screws which attach the two knee rest brackets to the knee rest cushion.

   Loosen the two 5/16-18 jam nuts (one right hand, one left hand) on tiebar and rotate to speed for alignment to new cushion mounting holes.
3. Reinstall cushion, do not tighten screws or jam nuts.

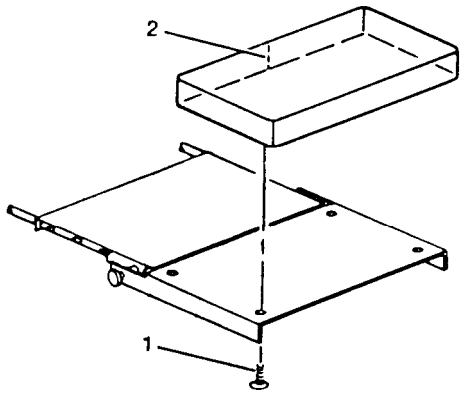
   Rotate tiebar to adjust inside span across knee rest brackets so that it is 1/8 + 1/32 – .O inch greater than outside span across the side plates of the knee rest crank assembly.
4. Securely tighten jam nuts and six flat head screws.
5. Return table to horizontal position.

Leg Section Cushion Replacement

1. Raise the outer end of the leg section to the horizontal position, tilt the table and I-e--move the four wing nuts from the understde of the cushion.
2. Attach the replacement cushion with the four wing nuts.

Removal — 8800 Series

1. Raise the leg section to the horizontal position and remove the four flat head slotted screws (item 1) from the underside of the cushion.



LEG SECTION CUSHION

Replacement

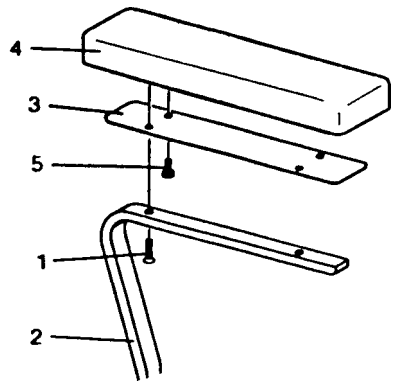
NOTE ▶ *Assure that edge seam (item 2) is toward the head of the table.*

Attach the cushion with the four flat head slotted screws. (Wood screws on 8800 Series).

Arm Rest Cushion Replacement

Removal

1. Remove the two flat head screws (item 1) that secure the cushion (item 4) to the arm rest support (item 2) and'plate (item 3).
2. Remove the two pan head screws (item 5) that secure the cushion to the plate.



ARM REST CUSHION

Reassembly

With the vertical seam of the cushion toward the head end of the table, reassemble in reverse order of removal.

LEG SECTION — 175, 8500, 8800 SERIES

The leg section frame assembly contains two slide rods, attached to the seat frame, that permit extending and retracting the leg section. A slide assembly, attached to the leg section, slides on the two rods.

To extend the leg section, pull outward on the two knobs, to release the knob plungers, and pull the leg section out to one of two incremental positions.

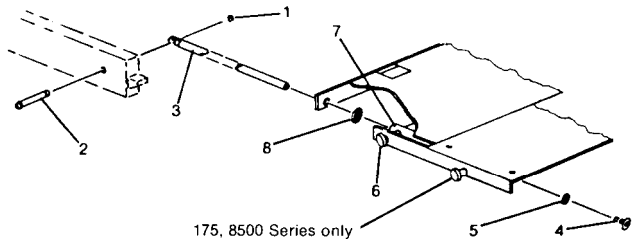
To retract the leg section, push the leg section into the desired position. The knob plungers automatically disengage from the two locking positions on the slide rods when retracting the leg section.

175, 8500 SERIES ONLY

The leg section of the table can be extended and retracted manually. The lower end can be raised and locked in a horizontal position for use as a knee rest when the leg section is in the vertical position.

Leg Section Disassembly & Reassembly

1. Raise the table to its maximum elevation.
2. Raise the leg section to the horizontal position and seat section to the fully tilted position. Remove debris tray (8800 Series only).
3. Remove the 3/8″ lock ring (item 1) from the cylinder rod end bearing pin.



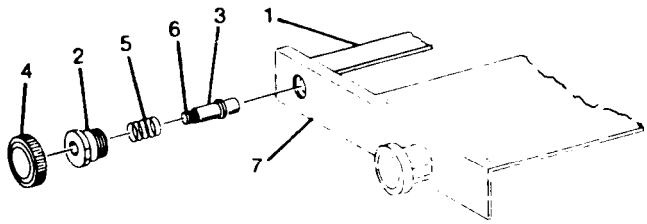
TELESCOPING LEG SECTION

4. Hold the leg section and push the bearing pin out of the mounting bracket and remove the cylinder rod end. Support the leg section with blocking while the cylinder is removed.
5. Lower the cylinder and let it hang from the seat section.
6. Remove the lock rings (item 1) from the leg section pivot pins (item 2) in the seat section.
7. Pull the pivot pins from the slide rods (item 3) and remove the leg section from the table.
a. Invert the leg section on a padded surface and remove the Phillips head screw (item 4) and trim washer (item 5) from the end of each slide rod.
9. Grasp the end of the slide rod toward the seat section. Pull the leg section locking knob (item 6) outward to release the slide rod and pull the slide rod from the leg section.
10. Removing the two sliding rods releases the knee rest slide assembly (item 7) and bumpers (items 8). To disassemble knee rest, see Knee Rest Disassembly & Reassembly on page 26. (175, 8500 Seriesonly).
11. Apply a light coat of lubricant to the slide rods (items 3) and reassemble in reverse order of disassembly.

Extension Locking Knob
Disassembly & Reassembly

The knobs toward the seat section of the table lock the telescoping leg section into the selected position.

1. Raise the leg section to the horizontal position.
2. Release the knob assembly from the slide assembly (item 1) by removing the locking cap (item 2) with a wrench.
3. Wrap paper or cloth around the plunger to protect the surface. Grip the threaded plunger (item 3) with pliers and turn knob (item 4) to loosen sealant and unscrew the knob from the plunger.



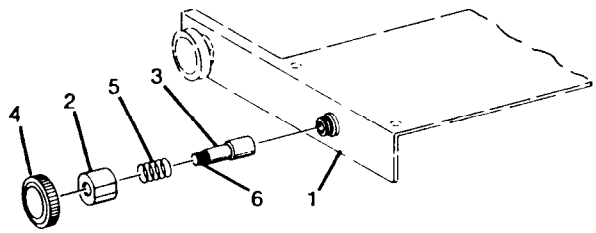
EXTENSION LOCKING KNOB

4. Remove the locking cap (item 2) and the coil spring (item 5) from the plunger.
5. To reassemble, place the coil spring and locking cap on the plunger. Then apply LOCKTITE 271 sealant or equivalent to the threads (item 6) on the plunger (item 3).
6. Screw threaded knob onto the plunger, reversing the procedure outlined in step 3.
7. Insert the plunger through the leg section frame (item 7) into the slide assembly (item 1) and tighten the locking cap into the slide assembly.

Knee Rest Locking Knob
Disassembly & Reassembly

The knobs at the outer end of the leg section release the knee rest when the knee rest is locked at a position perpendicular to the leg section.

1. Raise the leg section to the horizontal position.
2. Release the knob assembly from the knee rest frame (item 1) by removing the locking cap (item 2) with a wrench.
3. To release the knob from the threaded plunger, wrap paper or cloth around the plunger to protect the surface. Grip the plunger (item 3) with pliers and turn the knob (item 4) to loosen sealant and unscrew the knob from the plunger.

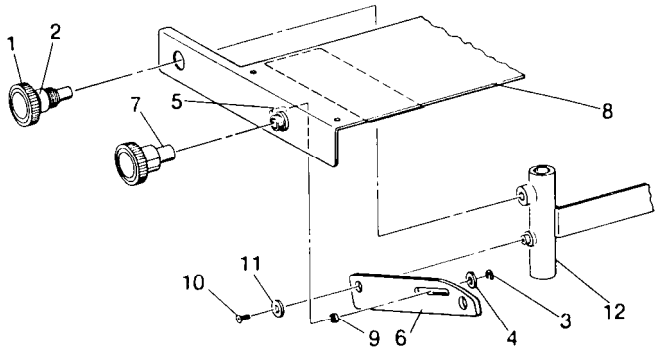


KNEE REST LOCKING KNOB

4. Remove the locking cap (item 2) and the coil spring (item 5) from plunger.
5. To reassemble, place the coil spring (item 5) and locking cap (item 2) on plunger.
6. Apply LOCKTITE 271 sealant or equivalent to the threads (item 6) on the plunger and screw the threaded knob onto the plunger, reversing the procedure outlined in step 3.
7. Insert the knob assembly into the knee rest frame (item 1) and tighten the locking cap (item 2) with a wrench.

Knee Rest
Disassembly & Reassembly

1. With the leg section in the horizontal position and the knee rest perpendicular to the leg section, remove the leg section extension locking knob assembly (item 1) by removing the locking cap (item 2) with a wrench.
2. Remove the lock ring (item 3) and washer (item 4) from each of the knee rest frame pins (item 5) at the inside of the locking arms (item 6).
3. Pull the knee rest locking knob plunger (item 7) from each locking arm and remove the knee rest (item 8). Remove spacers (item 9) from both knee rest frame pins.
4. Remove the Phillips head screw (item 10) and washer (item 11) from both sides of the slide assembly (item 12) and remove the locking arms.
5. Reassemble in reverse order of disassembly.



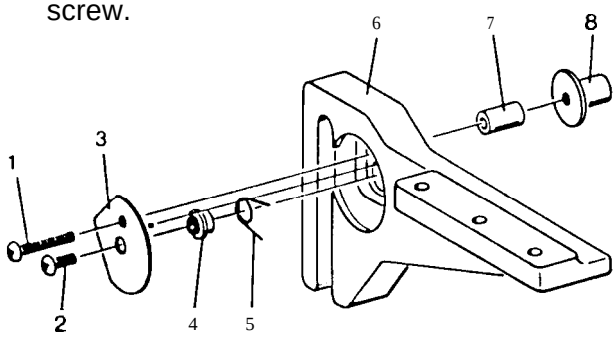
LEFT SIDE OF KNEE REST

LEG/KNEE REST SECTIONS — 170, 8700 SERIES

Knee Rest Lock/Release Assembly

The knee rest lock/release assembly can be disassembled and reassembled as follows for replacement of parts.

1. Remove screws (items 1 & 2) which will release all parts for disassembly.
2. To reassemble, put screw (item 2) through the latch disc (item 3), then assemble the latch spacer (item 4) and spring (item 5) to the screw on the inside of the disc.
3. Locate the upper end of the spring under the pin on the back side of the disc and assemble the lower end of the spring to the retaining groove inside the bracket (item 6). Secure the retaining screw (item 2) to the bracket.
4. Put screw (item 1) through the disc. Assemble spacer (item 7) to the screw and secure the latch actuator (item 8) to the screw.

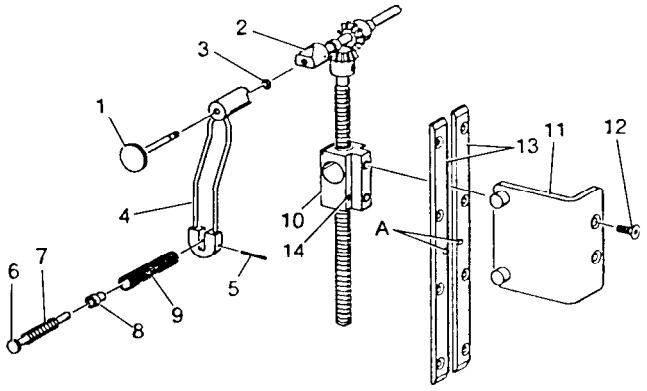


KNEE REST LOCK/RELEASE ASSEMBLY

Leg Rest Crank Handle Assembly

The leg rest crank handle assembly used for raising and lowering the knee rest section can be removed from the leg rest for assembly to the opposite side of the leg section. It can be removed and disassembled as follows for replacement of parts:

1. Unscrew the thumb screw (item 1) from the drive shaft adapter (item 2) to remove the handle assembly.
2. Remove retaining ring (item 3) to release the drive shaft adapter (item 2) from the crank arm (item 4).
3. Drive out pin (item 5) to release shaft (item 6), spring (item 7), bushing (item 8), and the crank handle (item 9).

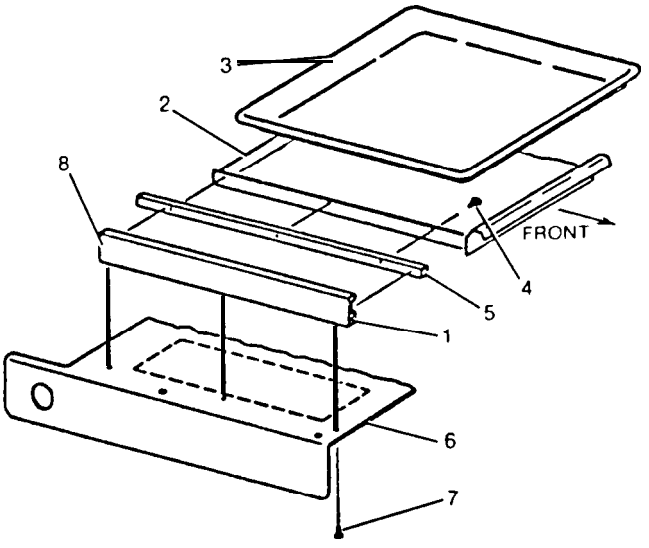


LEG/KNEE REST SECTIONS ASSEMBLY

Knee Rest Drive Adjustment

If the knee rest drifts downward from its adjusted height, the nut carriage body (item 10) can be adjusted as follows to provide proper tension as it moves up and down in the slide.

1. Remove the side plate (item 11) from both sides of the leg rest, secured with screws (item 12), to expose the two clearance holes "A" in the gibs (item 13) on both sides of the leg rest.
2. Operate the crank handle to position the two 1/4-20" screws (item 14) in alignment with the clearance holes "A".
3. Reach in through the clearance holes with an Allen wrench and turn the set screws inward slightly to eliminate any play. Do not overtighten to cause excessive friction.
4. Reassemble in reverse order of disassembly.



DEBRIS TRAY & CARRIAGE ASSEMBLY

DEBRIS TRAY & CARRIAGE ASSEMBLY — 8800 SERIES

Removal

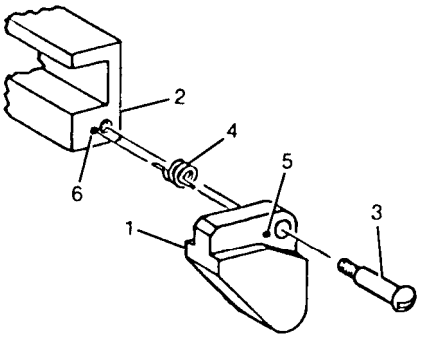
1. Push the lock/release lever (item 1) on the left hand side to release the carriage (item 2) and pull carriage forward to the fully extended position. The carriage supports removable tray (item 3).
2. Push the two lock/release levers on the left and right hand side to release the carriage at the fully extended position and pull on the carriage to remove it from the leg section.

Disassembly

1. Remove the debris tray and carriage from the table as outlined under Removal.
2. Remove the three pan head screws (item 4) to disassemble the carriage runner (item 5).
3. Raise the front end of the leg section cushion with its mounting plate (item 6) and take out the threeslotted head screws (item 7) to remove the carriage guide.

Lock/Release Lever Spring Replacement

1. Unscrew the post (item 1) that secures the lock/release lever (item 2) and spring (item 3) to the carriage guide (item 4).
2. Assemble the post, lever and replacement spring in the hole (item 5) of the lever.



LOCK/RELEASE LEVER

3. Place the post into the carriage guide, with the other end of the spring inserted in the hole (item 6) on the guide and tighten the post.

LIFT STRUCTURE PANELS

The cover panels consist of an outer group of four panels that move up and down with the structure and a group of four inner panels that are stationary at the base.

Four angle brackets on the base of the lift structure, to which the inner panels are secured, assure proper alignment of the panels.

Panel “G” is mounted to the two brackets at the foot end of the table base and panel “I” is mounted to the two brackets at the head end of the table base.

Removal of Lift Structure Panels

With all table sections in the horizontal position, and table fully elevated, raise the back section and tilt the foot end of the table fully upward for removal of panels.

Refer to the Lift Structure Panels Illustration to identify panels for removal.

Disconnect the table electrical supply cord to prevent electrical shock.

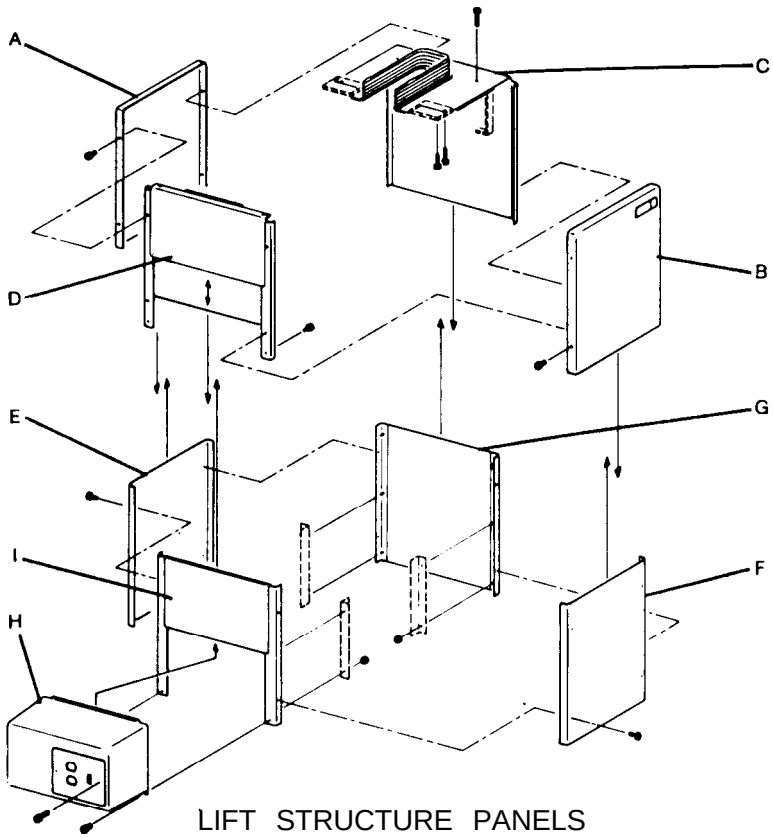
Removal of Panels A and B

To prevent damage to panels A and B when being released, place knee against panels to support them when removing the fourth screw.

Remove the four pan head screws from each panel to release the panel.

Removal of Panel C

1. Detach the bellows from the underside of seat section frame by removing the four pan head securing screws.
2. Remove panels A and B as outlined above.
3. Loosen the two screws on the underside of the panel top.
4. Remove the two pan head screws from the top of the panel to release it from the mounting bracket and pull the panel forward for removal.



LIFT STRUCTURE PANELS

Removal of Panel D

1. Loosen the two pan head screws from underneath the top edge of the panel.
2. Pull panel forward carefully to remove it.

Removal of Panel E and F

Remove the four pan head screws that secure each panel.

Removal of Panel G

Remove the four hex head securing nuts from the angle brackets inside the structure and pull the panel forward.

Removal of Power Pack Cover H

1. Remove the two Phillips head screws from the power pack cover Warning Plate, but do not remove the Warning Plate which is permanently secured to the cover.
2. Remove the two pan head screws that secure the lower corners of the cover.
3. Tilt bottom end of cover upward to clear lip top and pull forward to remove cover.

Removal of Panel I

Remove the four hex head securing nuts from the angle brackets inside the structure and pull the panel forward.

Reassembly of Lift Structure Panels

Reassemble panels in reverse order of removal unless power pack has been removed for service which requires the following alignment for assembly of the power pack cover.

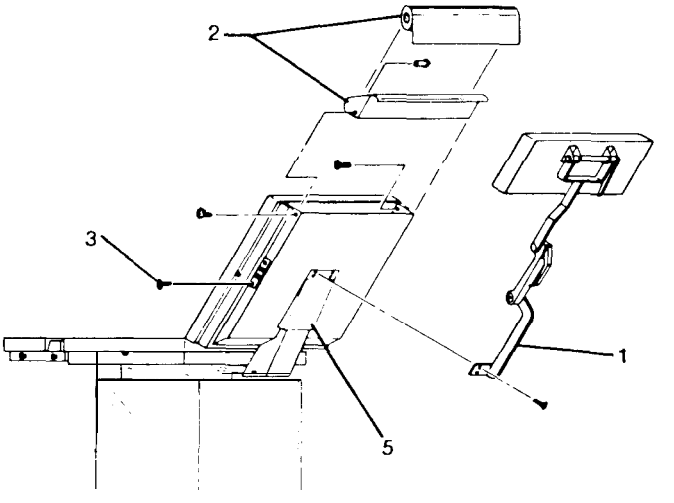
1. Insert the four Allen head screws loosely in the power pack adjusting brackets, place the cover in position on the power pack, and push cover and power pack inward until the cover touches inner panel I.
2. Remove the cover and securely tighten the four Allen head screws in the power pack adjusting brackets.
3. Bind the table electrical power service cord and two hoses, with a wire tie and fasten the tie to the motor mounting screw.
4. Tilt the cover to engage the top lip under the edge of the opening in inner panel I.
5. Secure the cover with two Phillip's head screws in the ON/OFF circuit breaker switch warning plate, and two pan head screws at the lower corners of the cover.

BACK SECTION COVER — 175, 8500, 8800 SERIES

Removal

Disconnect the table electrical supply cord to prevent electrical shock.

1. Remove the head rest assembly (item 1) secured to the back section with four slotted screws.
2. Remove the roll of paper from the paper roll tray (item 2).
3. Remove the paper roll tray which is secured with two Phillip's head screws and two pivot posts.
4. Remove two pan head screws from inside top edge of back cover.
5. Remove the two Allen head screws (item 3) that secure the cover to the switch plates on each side of the back support cover.
6. When access is required to the back section hydraulic cylinder, pull off thecylinder cover (item 5) which is held onto the cylinder cap pivot pin by friction.



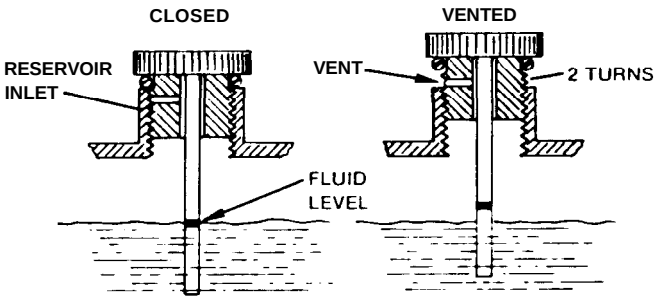
BACK SECTION COVER ASSEMBLY

Reassembly

Reassemble all components in reverse order of removal.

HYDRAULIC FLUID LEVEL CHECK

1. Retract all cylinders.



RESERVOIR PLUG/DIPSTICK/VENT

2. Remove the power pack cover as outlined under Lift Structure Panels on page 24 25
3. Screw fill plug into reservoir inlet as far as it will go.
4. Remove the plug and check the fluid level on the dip stick. Add fluid to line on dip stick if required.

NOTE *Some tables are provided with a hex shaped fill plug which is permanent/y vented.*

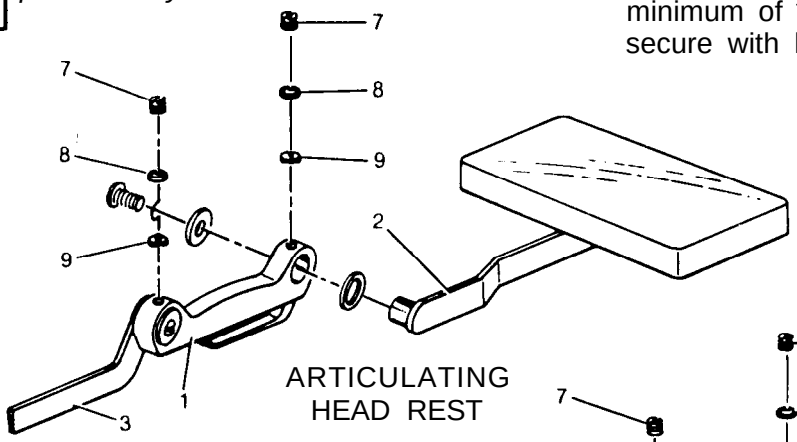
5. Replace the plug leaving it turned out two full turns for required ventilation.

HEAD REST ADJUSTMENT — 175, 8500, 8800 SERIES

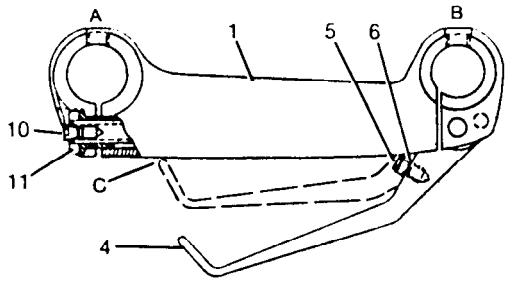
Swivel Post Adjustments

The swivel post (item 1) links the head rest yoke (item 2) to the head rest mounting post (item 3). It secures the head rest in a variety of positions, to support a patient's head and also secures the head rest in an out-of-the-way position behind the back section. It should permit the head rest to drift when the locking lever (item 4) is released, but not fall rapidly.

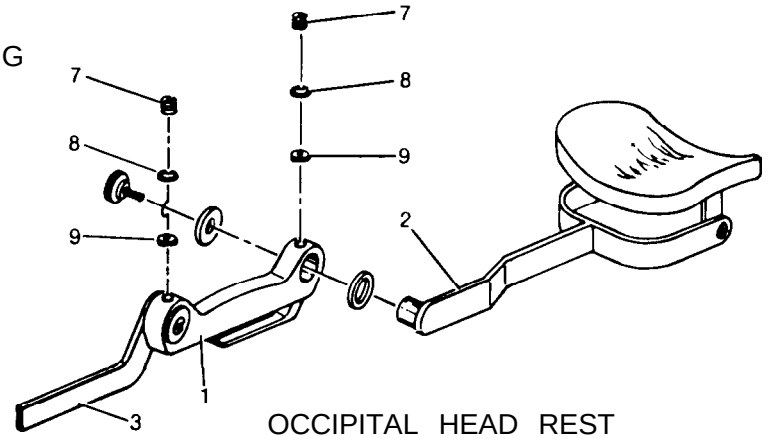
1. With the locking lever (item 4) released, check points A and B. If the head rest falls rapidly at either point A or point B, tighten the appropriate set screw (item 7).
2. If the head rest still falls rapidly, removeset screw (item 7) and replace the spring washer (item 8) or friction disk (item 9) as required.
3. With the locking lever (item 4) in the locked position and maintaining the desired head rest position, check to determine that the locking lever is not striking against the swivel post at point C. If the lever is striking against the swivel post, adjust the locking lever stop screw (item 5) to provide a minimum of 1/4" clearance at point C and secure with lock nut (item 6).



ARTICULATING HEAD REST



HEAD REST SWIVEL POST ASSEMBLY



OCCIPITAL HEAD REST

4. If the head rest does not maintain the desired position, after completing the adjustment described in step 3, adjustment of the draw rod tensioning nut (item 11) is required.
5. Release the locking lever (item 4). Loosen the set screw (item 10) and insert a screwdriver into the tensioning lock nut (item 11) and turn nut clockwise until the head rest maintains the desired position when the locking lever is moved to the locking position. Tighten the set screw (item 10).

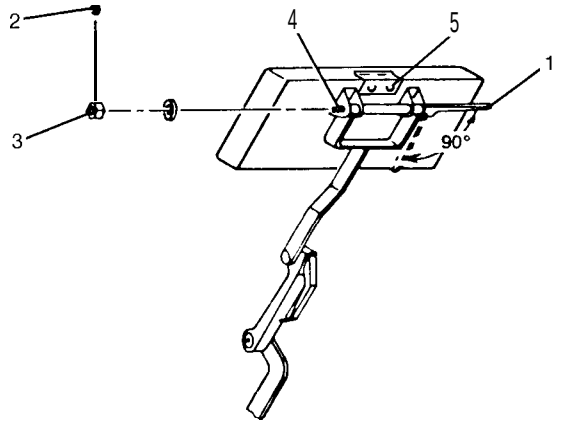
NOTE

The swivel post should hold the head rest in position without excessive manual force being exerted to lock the /ever. When the locking action is satisfactory, readjust the locking /ever set screw (item 5).

Articulating Head Rest Locking Lever Adjustment

The locking lever operates on a cam principle and locks in a position 90° from the draw rod. It releases when moved to a position in line with the draw rod.

1. Release the locking lever (item 1).
2. Loosen the set screw (item 2) in the draw rod tensioning nut (item 3) and loosen the nut to ease the head rest cushion movement or tighten the nut to restrict movement.
3. Operate the draw rod locking lever and check the adjustment.
4. When locking action issatisfactory, tighten the set screw (item 2) in the hex nut (item 3) to maintain the tension setting.
5. Remove (2) screws to remove head rest cover clip.



DRAW ROD LOCKING LEVER ASSEMBLY

SAFETY LINK LOCKING BAR ASSEMBLY

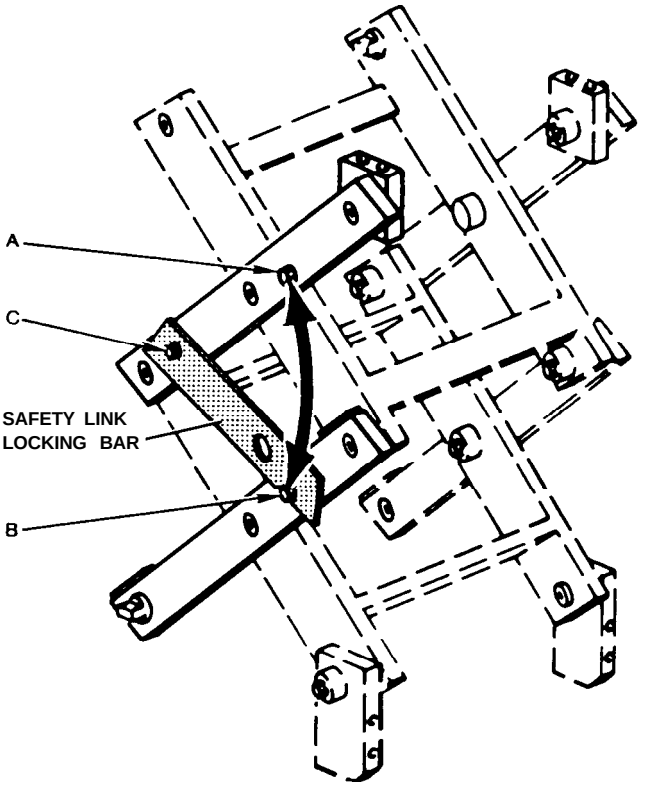
The safety link locking bar, on the side of link assembly of the lift structure, prevents the lift structure from collapsing or lowering during repair service.

Assemble the bar as follows:

1. Remove the hex head bolt from slotted end of link locking bar which is at the stored position A.
2. Pivot the link locking bar downward so that the slot in the bar is at position B and assemble the hex head bolt loosely to the threaded hole at position B.
3. Carefully lower the lift slightly, as needed, until slot in locking bar is in weight bearing position, then tighten the bolt.

WARNING

Check that both hex head bolts at locations B and C are tightened and the locking bar is in the weight bearing position, to prevent injury.



SAFETY LINK LOCKING BAR

TABLE ELECTRICAL POWER SUPPLY CORD

Replacement of the table electrical supply cord requires removal of paneling from the lift structure for routing and connecting wires within the structure.

Instructions that follow include securing the lift structure in the elevated position with the link assembly locking bar to prevent the possibility of the lift structure collapsing while working within the structure.

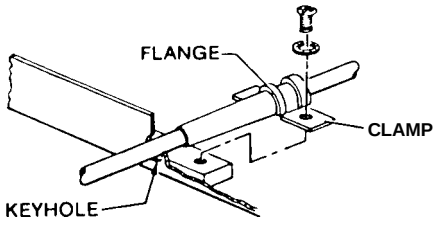
Removal

1. Raise the table top to the fully elevated position.
2. Remove lift structure panels A, B, E, F, G and power pack cover H as outlined under Removal of Lift Structure Panels on page 28.
3. Connect the safety link locking bar to the lift assembly as outlined under Safety Link Locking Bar Assembly on page 31.

Any step that requires reaching inside the lift structure must be done from the foot of the table, not the side, to reduce the possibility of injury.

Disconnect the table electrical power supply cord to prevent electrical shock.

4. Disconnect the cord from back of the power switch on table with 115V power supply or from terminal board on model with 230V power supply.
5. Disconnect the green/yellow cord grounding wire from the grounding stud.



CORD ASSEMBLY

6. Tape the ends of the wires together and fasten a fish wire of sufficient length to the taped wires to provide for routing the replacement cord into the table base.
7. If table has 115V power supply, cut the cord/hydraulic hose tie, attached to the mounting screw at the corner of the Transformer.
8. Remove the base plate cover from the head end of the table which is secured with two Phillip's head screws.
9. Remove the cord clamp which is secured with two pan head screws.
10. Push the cord in through the keyhole slot in the edge of base plate until the molded section is completely inside the base plate and lift the cord out of the keyhole slot.
11. Pull the cord from the two holes in the lower platform structure. Then pull the cord out of the table base at the head of the table being certain that the loose end of the fish wire remains in the lift structure.
12. Disconnect the fish wire from the cord.

Replacement

1. Tape the ends of the replacement cord wires together and attach the fish wire.

Do not assemble the cord to the keyhole slot in the base plate until cord connections have been completed.

When reaching inside the lift structure, reach in from the foot of the table, not the side, to reduce the possibility of injury.

2. From the foot of the table, pull the cord into the base with the fish wire.
3. Guide the end of the cord through hole in the table base, behind the lift cylinder bracket.
4. Pull the cord through the two holes in the steel structures, first the hole in the triangular reinforcing plate, then through the hole in the side of the power pack mounting frame. Connect the wires on a unit with 115V power supply to circuit breaker terminal toward the side of the table and the blue wire to the innermost terminal. On a unit with a 230V power supply, connect the wires to the terminal block labeled L, N, and E. Connect grounding wires to the grounding screw.

5. Secure the green/yellow grounding wire on the grounding stud toward the head of the table in the following sequence.
   a. brass lock washer
   b. grounding wire
   c. flat washer
   d. brass lock washer
   e. brass hex nut
6. If the table has 115V power supply, replace the cord tie binding the cord and two hydraulic hoses to the corner mounting screw of the transformer using needle nose pliers.
7. Move to the head of the table. With the molded section of the cord inside the base plate, push the cord into keyhole slot in edge of base plate.
8. Pull the cord out through keyhole slot until the flange on the molded section is seated against the keyhole.
9. Attach the cord clamp with the two pan head screws and assemble the base plate cover.
10. Remove the hex head bolt from the slotted end of link locking bar and place in storage position on the upper link of link assembly.
11. Replace the power pack cover and panels in reverse order of removal, as outlined under Removal of Lift Structure Panels on page 28.

POWER SUPPLY CORD PLUG REPLACEMENT

1. Disconnect the supply cord from the damaged plug.
2. Connect wires to the replacement plug. Refer to the 115V or 230V wiring diagram for proper wire color and terminal connection.

ON/OFF (I/O) SWITCH

The ON/OFF switch on a table that has a 115V supply circuit is a combined switch, bulb and resistor. A table that has a 230V supply circuit has just an I/O switch. Either switch is replaced as follows:

Removal

Disconnect the table electrical supply cord to prevent electrical shock.

1. Remove the power pack cover H as outlined under Lift Structure Panels, on page 29.
2. Disconnect the wires from the circuit breaker terminals noting wire connection locations.
3. Depress the spring clips on the assembly and push the assembly out through the mounting plate hole.

Replacement

1. Push the assembly into the hole in the mounting plate until the spring clips on the assembly secure it at the back of the mounting plate.
2. Reconnect the wires. Wire connections are shown on the wiring diagram.
3. Replace the power pack cover.

DUPLEX RECEPTACLE (115V SUPPLY CIRCUIT ONLY)

Removal

Disconnect the tab/e electrical supply cord to prevent electrical shock.

1. Remove the power pack cover H as outlined under Lift Structure Panels on page 29.
2. Disconnect the wires.
3. Remove the two flat head screws from the front of the receptacle.

Replacement

When assembling the replacement receptacle to the mounting p/ate, do not use the paper washers provided with the receptacle. The receptacle screws function in grounding the receptacle to the table structure, thus preventing electrical shock.

1. Assemble the receptacle to the mounting plate with the two flat head screws.
2. Connect the wires as shown on the wiring diagram.
3. Replace the power pack cover.

FUSES (230V SUPPLY CIRCUIT ONLY)

There are two T-4.0A/250V fuses in the main power supply circuit and two T-630mA/250V fuses in the transformer primary circuit.

Replacement

Disconnect the tab/e electrical supply circuit to prevent electrical shock.

1. Remove the power pack cover H as outlined under Lift Structure Panels on page 29.
2. Press down on the respective fuse and turn to release it from the fuse holder.

1-1/2 AMP TRANSFORMER PRIMARY FUSE (115V SUPPLY CIRCUIT ONLY)

Removal

Disconnect the table electrical supply cord to prevent electrical shock.

1. Remove the power pack cover H as outlined under Lift Structure Panels on page 29.
2. Remove the fuse from the spring clips mounted on the bracket above and to the right of the circuit breaker switch.

Replacement

1. Push the fuse into the spring clip holder.
2. Replace the power pack cover.

POWER PACK ASSEMBLY

Removal

Disconnect the table electrical supply cord to prevent electrical shock.

1. Remove the power pack cover H as outlined under Lift Structure Panels on page 29.
2. Slide the edge of a thin piece of plywood or stiff corrugated cardboard under the edge of the power pack to prevent damage to the base cover panel.
3. Disconnect the two hydraulic hoses from the pump.
4. Tighten the pump vent plug to prevent fluid spillage.
5. Disconnect the table electrical supply cord grounding wire from the stud in the power pack.
6. Remove table electrical power supply cord wires from the power pack assembly.
7. If the table has 115V power supply, remove the hose tie that binds the electrical cord and the two hydraulic hoses at the corner of the transformer.
8. Remove the four flat Allen Head screws (two from each side of unit) that secure the two power pack mounting plates.
9. Slide power pack out onto the plywood or corrugated cardboard.
10. Disconnect the red six pin connector, and slide the power pack out the rest of the way.

Replacement

1. Position the power pack on a thin plywood or stiff corrugated cardboard pad.
2. Connect the red six pin connector.
3. Slide the power pack into final position.

4. Assemble the electrical supply cord to the power pack assembly. Refer to the 115V or 230V wiring diagram for proper wire color and terminal connections.
5. Connect the green/yellow grounding wire to the grounding stud in the following sequence:
   a. Brass lock washer
   b. grounding wire terminal
   c. flat washer
   d. brass lock washer
   e. brass hex head nut
6. Connect hydraulic hoses:
   a. Connect the hose labeled "P" to the hydraulic fitting on the pump that is in line with the motor shaft.
   b. Connect the hose labeled "R" to the other hydraulic fitting.
   c. Tighten both fittings securely.
7. Secure the hose tie that binds the two hydraulic hoses and the table supply cord to the transformer corner mounting screw. Do not bind the hoses and cord until step #13.
8. Connect the power supply cord and lower the table top to the fully retracted position.
9. Check fluid level in the pump as outlined under Hydraulic Fluid Level Check on page 30.
10. Operate Leg section, Lift section, or seat section cylinder to remove any trapped air from the hydraulic system.

Before completing the installation, disconnect the table electrical supply cord to prevent electrical shock.

11. Attach the power pack to the table structure with four Allen head screws and two power pack adjusting plates.

Leave the Allen head screws loose to permit adjustment of power pack.

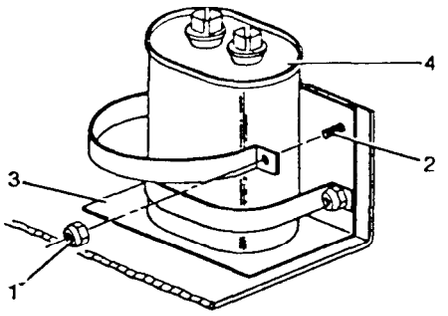
12. Pull the power pack outward to the limit of the slotted mounting brackets.
13. Place the power pack cover in position and push cover and power pack inward until edge of cover is touching inner panel I. Remove the cover and tighten the Allen head screws. With the wire tie on the transformer mounting screw, bind the table power service cord and two hoses, using needle nose pliers to tighten wire tie.
14. Assemble the power pack cover by engaging the top lip under the edge of the opening in inner panel I. Secure the cover by inserting two Phillip's head screws through the circuit breaker ON/OFF switch warning plate and two pan head screws at the lower corners of the cover.
15. Connect the table electrical supply cord.

CAPACITOR

Removal

Disconnect the tab/e power supply cord to prevent electrical shock.

1. Remove the power pack cover H as outlined under Lift Structure Cover Panels Removal on page 29.
2. Disconnect the wires from the capacitor noting the wire connection locations.
3. Remove the two self locking hex head nuts, (item 1) from the studs at the outer edge of the power pack plate (item 2), releasing the capacitor retaining straps, and remove the capacitor.



CAPACITOR

Replacement

When positioning *the capacitor, make certain that the insulating* material (item 3) *at the bottom and side of the capacitor toward the power pack plate is in position and that the insulating sheet (item 4), wrapped around the capacitor, is secure to prevent electrical current leakage which could cause electrical shock.*

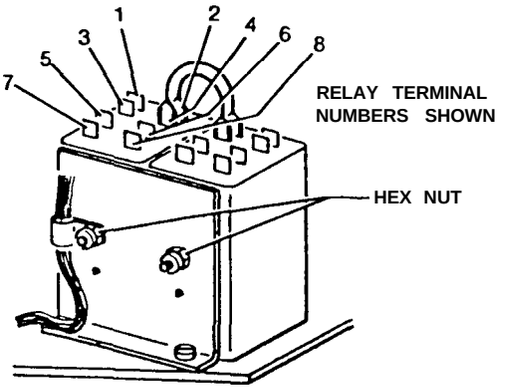
1. Secure the capacitor by fastening the self locking hex head nuts to the mounting studs projecting through the insulation sheet and the mounting straps.
2. Connect the wires to the capacitor terminals. Assemble the power pack cover.

RELAYS

Disconnect tab/e power supply cord to prevent electrical shock.

Removal

1. Remove the power pack cover H as outlined under Lift Structure Panels Removal on page 29.
2. If the table has 230V power supply, loosen the strain relief and remove the nuts that secure the cover. Raise the cover to expose the relay terminals.
3. Disconnect the wires from the relay terminals noting the connection locations.
4. Remove the self locking hex head nut that secures the relay mounting stud to the mounting bracket.



RELAYS (115V SHOWN)

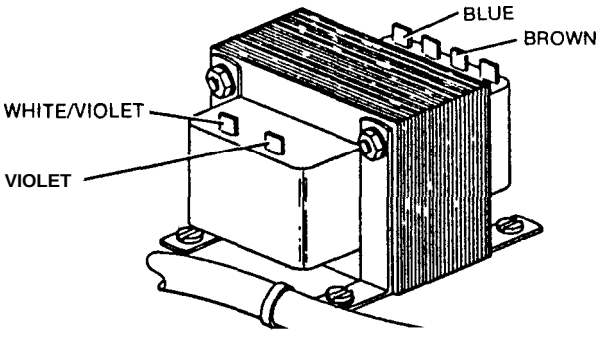
Replacement

1. Slide the relay mounting stud through the relay mounting plate and secure with self locking hex head nut.
2. Connect the relay wires and reassemble in reverse order of removal.
3. Replace the power pack cover.

TRANSFORMER
Removal

Disconnect table power supply **cord** *to prevent electrical shock.*

1. Remove the power pack cover H as outlined under Lift Structure Cover Panels Removal on page 29.
2. If the table has 230V power supply, disconnect the two pin connectors of the transformer wires from the mounting bracket at the relays. If the table has 115V power supply, disconnect the wires from the transformer terminals noting the connection locations.
3. Remove the four slotted head screws from the transformer mounting brackets and remove the transformer.



TRANSFORMER (115V SHOWN)

Replacement

1. Secure the transformer to the power pack mounting plate with the four slotted head screws.

NOTE **Be certain to secure hose tie on** *screw at corner of transformer.*

2. Connect the transformer wiring in reverse order of removal.
3. Replace the power pack cover.

Voltage Compensation

These Series tables are designed to operate over a voltage range of 100 to 127, plus 7%, minus 3% voltage.

For voltages from 97 to 107 volts move wire marked (BR) to'terminal3 "100V". For voltages from 123 to 135 volts use terminal 1 "127V".

MOTOR ROTATION

The motor shaft turns clockwise (as viewed from the side of the table opposite the pump). If the motor is turning counterclockwise, refer to the wiring diagram and inspect all Terminal connections. Reconnect the wires to establish the required polarity.

WARNING *Disconnect the table electrical power supply cord to prevent electrical shock.*

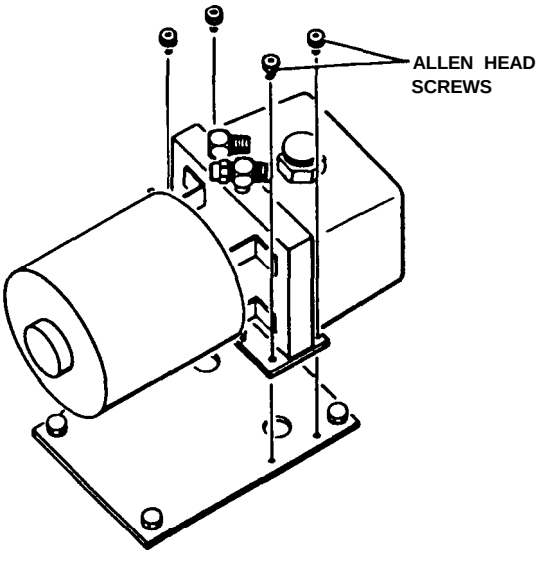
MOTOR/PUMP ASSEMBLY

The electrical motor and hydraulic pump are a single assembly. When replacement of the motor or the pump is required, both must be replaced as a single assembly.

WARNING *Disconnect the table electrical power supply cord to prevent electrical shock. The motor is not grounded.*

Removal

1. Remove the motor/pump assembly which is secured to the mounting plate with four Allen head screws.
2. Disconnect motor wires and pump hoses.
3. Tighten the pump reservoir plug securely.



MOTOR/PUMP ASSEMBLY

Replacement

1. Transfer the pump mounting plate secured to the bottom of the pump with two bolts, to the replacement motor/pump.
2. Position the motor/pump assembly in the power pack and secure it with the four Allen head screws.

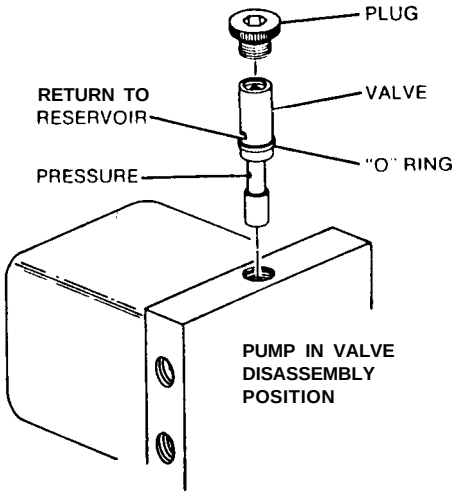
NOTE *Apply grease to end of Allen wrench to ho/d screw, and seat screw on wrench. Lower screw to hole in base plate and tighten.*

3. Connect the motor wires and pump hydraulic hoses.
4. Check hydraulic fluid level in reservoir as outlined on page
5. Assemble power pack cover as outlined on page 29.

PUMP PRESSURE RELIEF VALVE

Removal

1. Disconnect the hoses from the pump, cap the hydraulic fittings.
2. Disconnect the motor wires.
3. Tighten the pump reservoir plug securely.
4. Remove the motor/pump assembly which is secured to the mounting plate with four Allen head screws.
5. Turn the assembly onto its side with the pressure relief valve plug upward.
6. Remove the pressure relief valve plug with an Allen wrench.
7. Carefully lift the pressure relief valve from the pump housing, with needle nose pliers.



PRESSURE RELIEF VALVE

Replacement

1. Lubricate the o-ring on pressure relief valve with hydraulic fluid.
2. Insert the valve into the pump housing and secure with the plug.
3. Replace motor/pump assembly in power pack.

NOTE ▶ *Apply grease to end of Allen wrench and seat Allen screw on wrench. Lower screw to hole in base plate and tighten.*

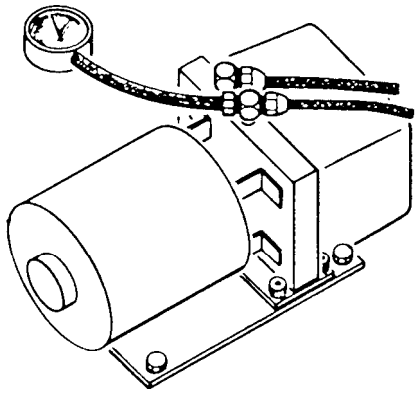
4. Connect the hydraulic hoses to the pump. Connect the motor wires.
5. Check level of hydraulic fluid in reservoir as outlined on page 30.

HYDRAULIC FLUID PRESSURE

To verify that the motor/pump assembly is operating within design tolerances requires attaching the pressure gauge assembly listed on page 1 of this manual, to the T fitting on the pump assembly and connecting an ammeter as outlined under Ammeter Connection.

Pressure Gauge Connection

1. Remove the power pack cover as outlined under Lift Structure Panels on page 29.



PRESSURE GAUGE ASSEMBLY

2. Remove the cap from the tee fitting on the hydraulic pump and connect the O-1000 P.S.I. pressure gauge assembly to the Tee fitting.

AMMETER CONNECTION

1. If the table has 115V power supply, disconnect the BROWN K-2 relay wire from the #4 terminal on the terminal block and connect the ammeter between the BROWN wire and the #4 terminal.
2. If the table has 230V power supply, disconnect the in-line connector in the brown motor lead wire and connect the ammeter to the two disconnected in-line wires.

MEASUREMENTS — TYPICAL VALVES
(No Load On Table)

Cylinder	Movement	Pressure P.S.I.	Amps 60 Hz 115v	Amps 50 Hz 230V
Lift	Extension	**470** P.S.I.	**3.5**	1.3
	Retraction	490 P.S.I.	**3.7**	1.5
Back section Leg section Seat section (tilt)	Extension	**275** P.S.I.	**3.2**	1.1
	Retraction	**325** P.S.I.	**3.4**	1.2

NOTE: Typical pump relief valve pressure is 775 Psig, 4.5 Amps (115V), 2.0 Amps (230V) when continuing operation after cylinder is fully extended or retracted.

The pressure relief valve which protects the hydraulic system from excessive pressure, is pre-set to release at 775 psig. If the pressure relief valve permits the pressure to exceed 850 psig, replace the valve as outlined under Pump Pressure Relief Valve on page 27.

HYDRAULIC VALVE MANIFOLD

The hydraulic valve manifold is a multi-valve block that controls the distribution and flow direction of the hydraulic fluid. Passages within the manifold are opened and closed by solenoid valves. In the case of a sudden drop in pressure, when pump pressure is removed, the pilot operated check valve for that cylinder closes, maintaining the table position. The flow control valve is mounted on the top of the manifold and is connected to the lift cylinder retraction hose.

Disconnect the table electrical supply cord to prevent electrical shock. The motor is not grounded.

1. Remove the power pack cover H as outlined under Lift Structure Panels on page 24 and disconnect the BROWN (alternate color YELLOW) motor wire from the terminal to prevent the motor/pump from functioning accidentally; also panel E if lift structure is at lowest position.

2. Remove outer panel A, and also panel E if lift structure is at lowest position, as outlined under Removal of Lift Structure Panels on page 25 and place absorbent material around the manifold to absorb any fluid when a valve is removed.

3. Connect the BROWN (alternate color YELLOW) motor wire and the table electrical power supply cord for test & repair purposes.

Pilot Operated Check Valve
Removal

1. With the BROWN (alternate color YELLOW) motor wire disconnected from the capacitor and absorbent pads in position, remove the check valve from the manifold with a 7/8″ Box, or Socket wrench.

2. Test the valve spring by inserting a small pin punch into the end of the valve assembly. If there is no spring action replace the assembly.

3. Check the spool for damage. Replace as required.

If spool is lodged in the manifold, the manifold must be replaced as outlined under Manifold Removal and Replacement on page 37.

4. Coat the check valve o-rings with Parker Super O-Lube only.

5. Reassemble the check valve assembly into the manifold. Do not over tighten the valve which could strip the threads. If fluid leaks from manifold, replace ‘‘O’’ ring on the valve.

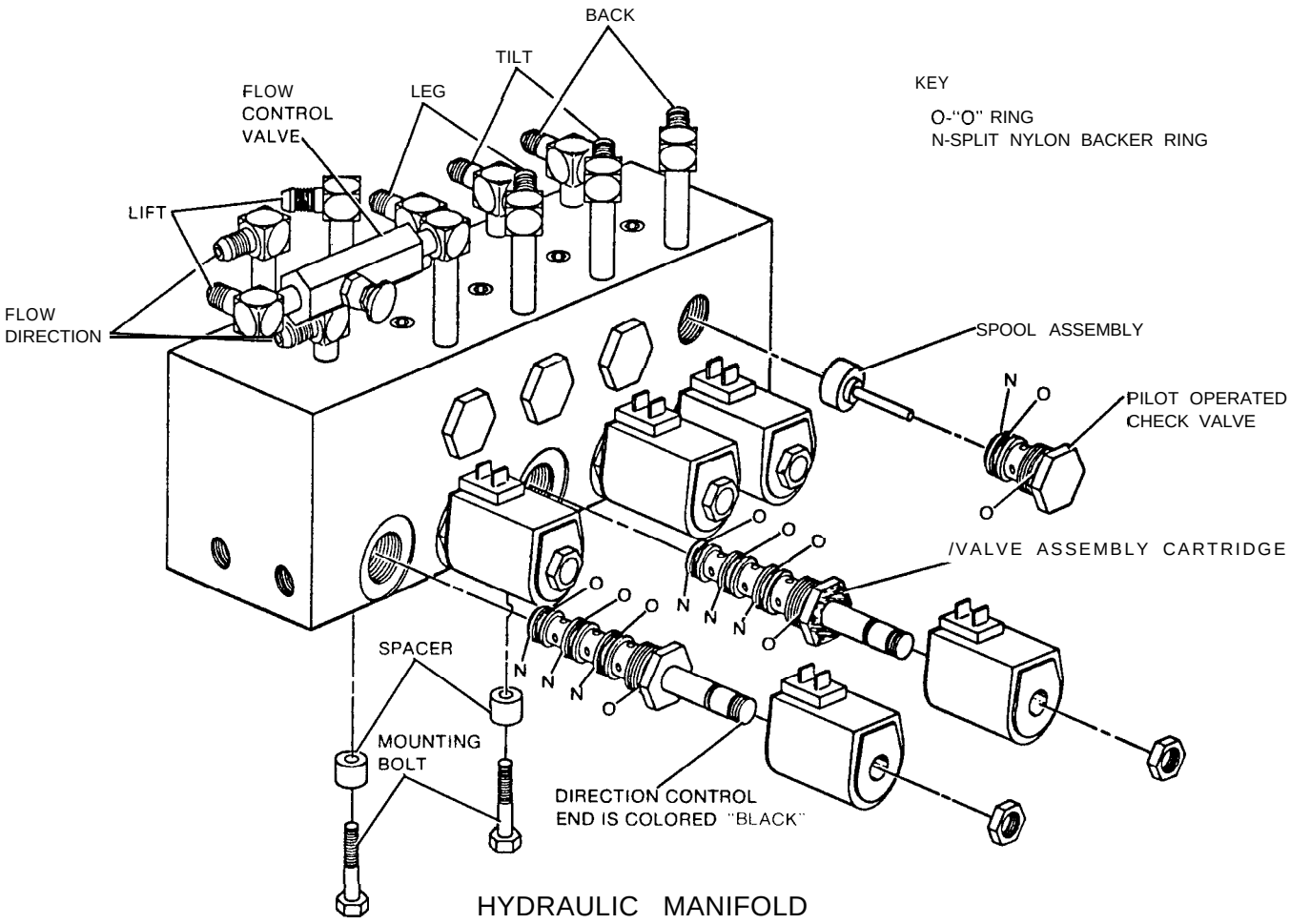
6. Clean any spilled fluid from the equipment and remove absorbent material.

Disconnect the table electrical, supply cord to prevent electrical shock.

7. Connect the BROWN (Alt. - YELLOW) motor wire.

8. Assemble outer panel A and E if removed, and power pack cover H.

9. Connect the electrical supply cord



HYDRAULIC MANIFOLD

Valve Solenoids

Test

NOTE) *The 170 & 8700 Series uses a 3 power manifold instead of 4 power as 175, 8500 and 8800 Series. Repair and replacement is same procedure.*

WARNING *Testing the solenoids requires energizing the coils which could cause table movement resulting in personal injury.*

1. Place the end of a small screwdriver with an insulated handle against the end of the valve cartridge shaft located at the center of the 3/8" hex nut.
2. Energize the solenoid and check for presence of magnetism between the screwdriver and the end of the valve cartridge shaft.
3. If no magnetism exists, check for 24VAC at the terminals of the coil. If voltage exists, the coil is defective. If no voltage exists, check for broken wire.

Removal

WARNING *Disconnect the tab/e electrical supply cord to prevent electrical shock.*

1. Disconnect electrical wires attached to the top of the solenoid coil.

If more than one coil is faulty service them one at a time to assure correct electrical reattachment.

2. Remove the 3/8" hex nut that fastens the coil housing and coil to the valve cartridge shaft.
3. Remove the coil housing and coil and slide the housing off the faulty coil.

Replacement

1. Insert the new coil into the coil housing.
2. Slide the coil and coil housing over the valve cartridge shaft and fasten with the 3/8" hex nut.
3. Connect the electrical wires.
4. Assemble outer panel A and E if removed, and power pack cover H.

Directional Control Valve Cartridge

When the back, leg, elevation, and tilt switches function in only one direction and the solenoid coil is not defective, it indicates the directional flow control valve cartridge could be defective.

Removal

1. With the BROWN Motor wire disconnected from the capacitor and absorbent pads in position as outlined under Hydraulic Manifold Valves, remove the solenoid coil secured to the valve stem by a hex nut.
2. Remove the valve cartridge with a 7/8" deep well socket wrench. Note that the end of the core stem is colored black for identity and others are not colored.

Replacement

The directional flow cartridge is replaced as a complete assembly. Use Parker Super o-ring lubricant only.

1. Insert valve cartridge into manifold and secure using a 7/8" deep well socket wrench.
2. Assemble the solenoid on the valve stem with a 3/8" hex nut.
3. Clean any spilled fluid from the equipment and remove the absorbent material.
4. Connect the BROWN (alternate color YELLOW) motor wire to the capacitor.
5. Connect the table electrical supply cord and operate the table cylinders. Return all cylinders to the fully retracted position.

Disconnect the table electrical supply cord to prevent electrical shock.

6. Check the level of hydraulic fluid in the reservoir as outlined under Hydraulic Fluid Level Check on page 30.
7. Assemble outer panel A and E if removed, and power pack cover H.
8. Connect electrical supply cord.

Cylinder Valve Cartridge

All three cylinder valve cartridges are distinguished from the directional control cartridge by not having the end of the core coil stem colored black.

Removal

1. With the BROWN (alternate color YELLOW) wire disconnected from the capacitor as outlined under Hydraulic Manifold Valves and absorbent pads in position, remove the 3/8" hex nut and the solenoid coil.
2. Remove the valve cartridge with a 7/8" deep well socket wrench.

Replacement

The cylinder valve cartridge is replaced as a complete assembly. Use Parker Super 0 lubricant only.

1. Insert the valve cartridge into the manifold and secure using a 7/8" deep well socket wrench. Do not over tighten.
2. Assemble the solenoid to the valve stem and secure it with the 3/8" hex nut.
3. Clean any spilled fluid from the equipment and remove absorbent material.

4. Connect the BROWN (alternate color YELLOW) motor wire to the capacitor.
5. Connect the table electrical supply cord and operate the table cylinders. Return all cylinders to the fully retracted position.

Disconnect the table electrical supply cord to prevent electrical shock.

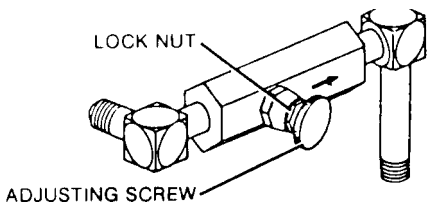
6. Check level of hydraulic fluid in the pump reservoir as outlined under Hydraulic Fluid Level Check on page *30.*
7. Assemble outer panel A and E if removed and power pack cover H.

Rate of Flow Control Valve

The flow control valve is pre-set to provide a rate of fluid flow that permits elevating the table 15-1/2" within therangeof 11-18second.s and lowering the table 15-1/2" in minimum of 17 seconds. If the table moves downward at a rate more than one second per inch, the flow control valve can be adjusted to reduce the speed.

Adjustment

1. Release the lock nut on the flow control valve adjusting screw.
2. Turn the adjusting screw in or out as necessary to obtain the required rate of flow.
3. Tighten the lock nut
4. Measure the time to lower table. Approx. 17 seconds is required.
5. Assemble outer lift structure panel A.



FLOW CONTROL VALVE

Removal

1. With the BROWN (alternate color YELLOW) motor wire disconnected from the capacitor as outlined under Hydraulic Manifold Valves and absorbent pads in position, disconnect the hose from the flow control valve and plug the hose.
2. Remove the flow control valve from the manifold hydraulic fitting and remove the hydraulic hose fitting from the valve.

Replacement

1. Connect the flow control valve, with the arrow on the valve pointing in the direction shown, to the hydraulic fitting on the manifold. Use Locktite H/S pipe sealant.
2. Connect the hydraulic fitting, removed from the valve in step 2 under Removal, to the flow control valve and connect the hydraulic hose. Use Locktite H/S pipe sealant.
3. Clean any spilled fluid from the equipment and remove absorbent material.

Disconnect the table electrical supply cord to prevent electrical shock.

4. Connect the BROWN (alternate color YELLOW) motor wire to the capacitor.
5. Connect the table electrical supply cord and operate the table cylinders. Return all cylinders to the fully retracted position.
6. Check level of the hydraulic fluid in the reservoir as outlined under Hydraulic Fluid Level Check on page 30.
7. Assemble outer panel A, E if removed, and the power pack cover H.

Hydraulic Manifold Replacement

The hydraulic manifold is replaced as a complete assembly.

Disconnect the tab/e electrical supply cord to prevent electrical shock.

Removal

1. With all cylinders in the retracted position except for the tilt cylinder which is blocked up, with a wooden block, with the BROWN (alternate color YELLOW) motor wire disconnected from the capacitor as outlined under Hydraulic Manifold, and absorbent pads in position, disconnect and plug the hydraulic hoses.
2. Disconnect the solenoid coils from the valves.
3. Remove the manifold and two spacers secured with two hex head bolts at the bottom of the manifold.

Replacement

1. Mount the manifold with the two spacers and two hex head bolts.
2. Connect all hoses to their respective manifold hydraulic fittings.
3. Connect the solenoids to the directional control valve and cylinder valves with hex nuts.
4. Clean any spilled fluid from the equipment and remove the absorbent material.

Disconnect the table electrical supply cord to prevent electrical shock.

5. Connect the BROWN (alternate color YELLOW) wire to the capacitor.
6. Connect the table electrical supply cord and operate the table cylinders. Return all cylinders to the fully retracted position.
7. Check the hydraulic fluid in the reservoir as outlined under Hydraulic Fluid Level Check on page 30.
8. Replace outer panel A, E if removed, and the power pack cover H.

Manifold Hydraulic Fittings

Removal

Disconnect the table electrical power supply cord to prevent electrical shock.

1. Remove outer panel A and inner panel E as outlined under Lift Structure Panels on pages 28 and 29.

P/ace absorbent material at the manifold to absorb any fluid dripping from the manifold fitting and the hose to be disconnected.

2. Disconnect the hose from the manifold fitting and plug the hose.

To remove the flow control valve manifold fitting, disconnect the hose from the flow control valve, then disconnect the flow control valve from the manifold fitting.

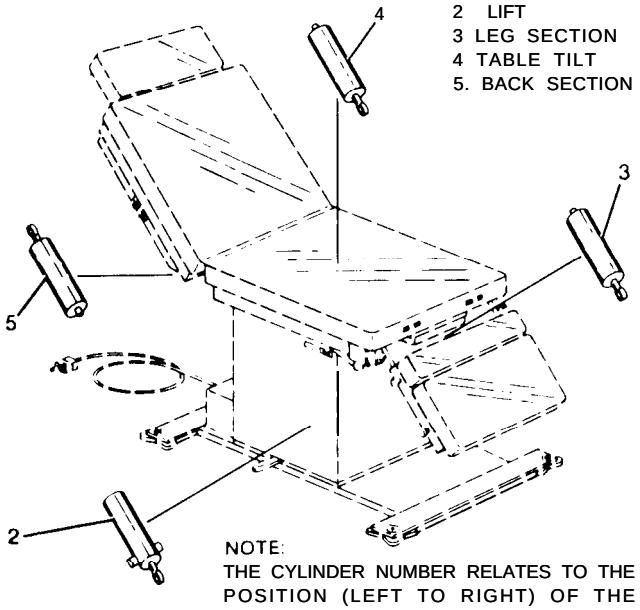
3. Remove the hydraulic fitting from the manifold. Prevent dirt or foreign particles from entering open ports.

Replacement

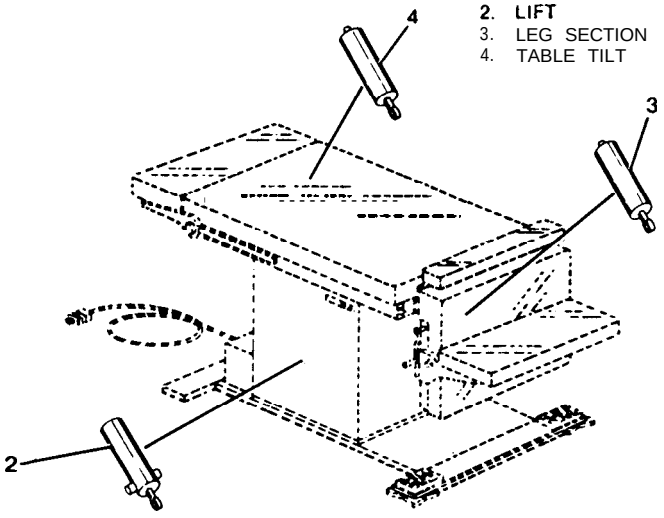
1. Apply Locktite H/S sealant to the threads of the hydraulic fitting before assembling to the manifold.
2. Screw the fitting into the manifold and tighten.
3. Connect the hose to the manifold fitting.

Bleeding of any air in the manifold will occur at the vent plug in the pump reservoir as the hydraulic fluid flows through the manifold.

4. Connect the table electrical power supply cord and operate the valve through which the fluid flows.



PROCEDURE TABLE CYLINDERS



NOTE:
THE CYLINDER NUMBER RELATES TO THE POSITION (LEFT TO RIGHT) OF THE SOLENOID VALVE ON THE MANIFOLD THAT OPERATES THE CYLINDER.

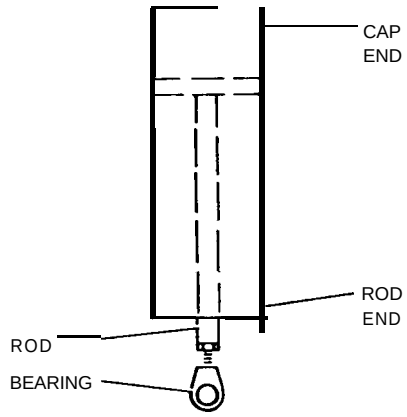
PROCEDURE TABLE CYLINDERS
170, 8700 SERIES TABLES

5. Remove the power pack cover H as outlined under Lift Structure Panels on page24 and check the hydraulic fluid level in the reservoir as outlined under Hydraulic Fluid Level Check on page 30.
6. Remove absorbent material from the manifold.
7. Assemble lift structure panels A and E, and power pack cover H.

HYDRAULIC CYLINDERS

Four cylinders mounted in the table structure provide the force for positioning the table sections.

The ends of the cylinder are referred to as the cap end and the rod end.



HYDRAULIC CYLINDER

Removal of Air from Cylinder

After acylinder has been replaced, most air remaining in the cylinder may be exhausted through the pump reservoir vent by operating the table section through five cylinder extensions and retractions.

Lift Cylinder Removal

Any cylinder that develops a leak or becomes noisy must be replaced as a unit.

Removal of the lift cylinder requires securing of the lift structure in the elevated position with the safety link locking bar to prevent the lift structure from collapsing and injuring personnel.

1. Raise the table top to the fully elevated position.
2. Remove lift structure panels A, B, C, E, F, G, & H as outlined under Lift Structure Panels on pages 28 and 29.

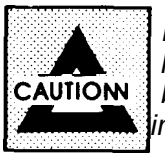
If the tab/e lift cylinder will not function to raise the lift structure, and the lift structure is partial/y or fully raised, the lift cylinder base can be released by removing the two hex head bolts (item 12). Then two people must lift the tab/e top to raise the lift structure for assembly of the safety link locking bar. If the lift structure is fully down, it will be necessary to disconnect the two lift cylinder hydraulic hoses from the top of the manifold. For identification of the lift hose connections, refer to illustration of manifold on page 40. Place both hoses in a container to catch hydraulic fluid. Then two people must raise the lift structure for assembly of the safety link locking bar.

3. Connect the safety link locking bar to the lift assembly as outlined under Safety Link Locking Bar Assembly on page 31.

During removal and replacement of the lift cylinder. disconnect the power supply cord and work from the foot end of the tab/e, not the side to a void injury and electrical shock.

4. Loosen the two hex head bolts (item 11) from each cylindertrunnion mouting block. Do not remove the bolts.
5. Remove the two hex head bolts (item 12) and lock washers from the cylinder rod bearing mounting bracket.
6. Complete removal of the cylinder trunnion mounting blocks loosened in step 4.
7. Place absorbent material below the cylinder and disconnect the hydraulic hoses. Cap both fittings on cylinder to prevent hydraulic fluid spillage.
8. Manually lift the cylinder, out of the lift structure to foot end, rotating as necessary to clear the trunnions.
9. Remove the mounting bracket, (item 4), from the cylinder as follows:
   a. Loosen the Allen head screw (item 13) in the mounting bracket.
   b. Remove the 1/2'' lock ring (item 10) from the bearing pin.
   c. Push the pin through the bracket to release the cylinder shaft and two spacers (item 7).

Lift Cylinder Replacement



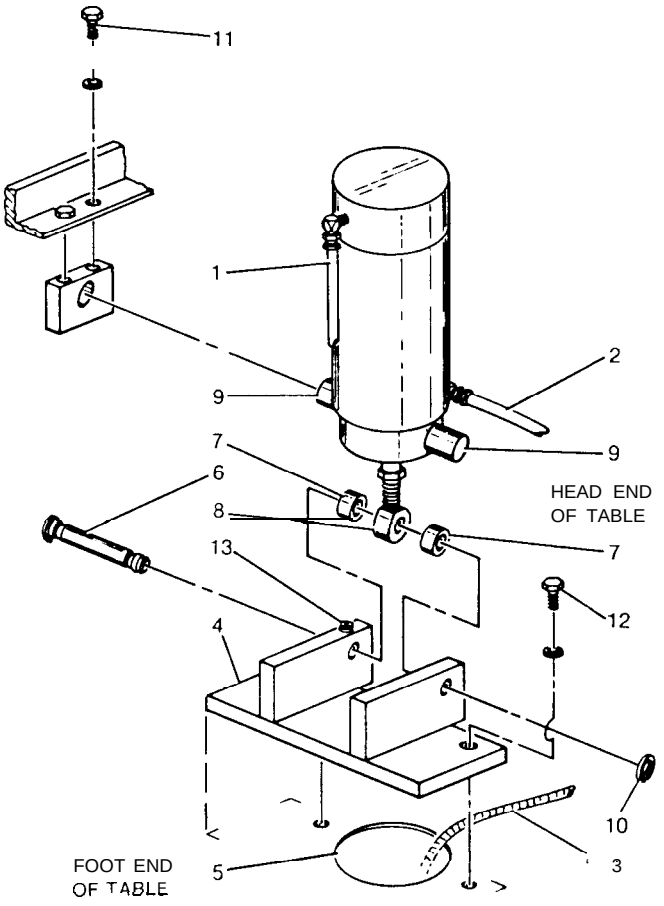
In the installed position, the wiring harness & power cord (item 3) must be unrestricted in the center ho/e in the tab/e base p/ate.

The overhang of the cylinder rod end mounting bracket (item 4) must be toward the head of the table as it is installed to provide unrestricted space for the harness.

To prepare for assembling the cylinder shaft to the mounting bracket, hold the cylinder vertically above the bracket with the cylinder rod end hydraulic fitting (item 2) above the bracket overhang. Pivot the cylinder down to rest on the work surface and assemble it to the bracket as follows:

1. Grease the pivot pin (item 6), lightly with chassis lubricant and push pin through the side of mounting bracket (item 4), spacer (item 7), rod bearing (item 8), spacer (item 7), mounting bracket (item 4) and secure with retaining ring (item 10).

   Tighten Allen set screw (item 13) in mounting bracket.



LIFT HYDRAULIC CYLINDER

2. Grease the cylinder trunnions (items 9) lightly with chassis lubricant.

3. Insert the rod end of the cylinder with attached mounting bracket into center of lift structure, rotating slightly as required to clear bracket into position on lower platform.

4. Check that the wire harness is toward the head of the table from the bracket and that the bracket overhang is toward the wire harness.

5. Secure the bracket to the table base with the two hex head bolts (item 12) and lock washers. Torque the hex head bolts to 20 ft. lbs.

6. Connect the hydraulic hose (item 1) to the fitting at the cap end of the cylinder and the hydraulic hose (item 2) to the fitting at the rod end of the cylinder.

7. Position the trunnion mounting blocks on the cylinder trunnions (item 9).

8. Connect hoses to the manifold if they were previously disconnected for raising the table.

9. Connect the table electrical supply cord.

10. Extend cylinder carefully until the trunnion mounting block holes are aligned with the mounting holes in the lift structure links.

11. Attach the mounting blocks with the four hex head bolts (item 12) and lock washers. Torque the hex head bolts to 20ft. lbs.

12. Remove the safety locking bar hex head bolt. Pivot the bar to the “stored” position on the upper link and secure it with the hex head bolt.

13. Lower the lift assembly and retract all four table cylinders.

14. Check level of the hydraulic fluid in the reservoir as outlined under Hydraulic Fluid Level Check on page 30.

15. Assemble the power pack cover & panels in reverse order of removal.

Back Section Cylinder Removal

In any step that requires connecting the table electrical supply cord during cylinder removal and replacement, disconnect the cord immediately upon comple tion of the step to prevent electricalshock.

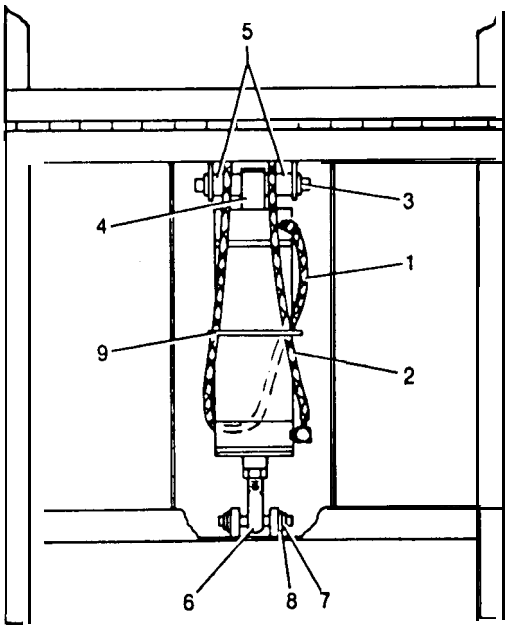
1. Raise the back section and disconnect the table electrical supply cord.

2. Remove the back cover, cylinder cover, and head rest as outlined under Back Cover Removal on page 29.

3. Connect the table electrical supply cord and lower the back section to the horizontal position. Disconnect the table electrical supply cord.

4. Remove the back/seat cushions which are secured with four 1/4″ wing nuts on the bottom of each cushion.

5. Cut the hose tie (item 9) noting position of the hoses.



BACK HYDRAULIC CYLINDER
175, 8500, 8800 SERIES ONLY

6. Remove the pin from the cylinder rod end bearing (item 6) by removing the 3/8″ retaining ring (item 7), and pushing the pin through the mounting bracket.
7. Manually lift the back section frame and lay it over onto the seat frame.
8. Disconnect, the hydraulic hoses (items 1 & 2) from the cylinder. Plug the hoses and cap the cylinder hydraulic fittings to prevent hydraulic fluid spillage.
9. Disassemble the cylinder cap end (item 4) and two spacers (items 5) from the pin by removing a 7/16″ lock ring (item 3) from the pin and push the pin through the mounting bracket.

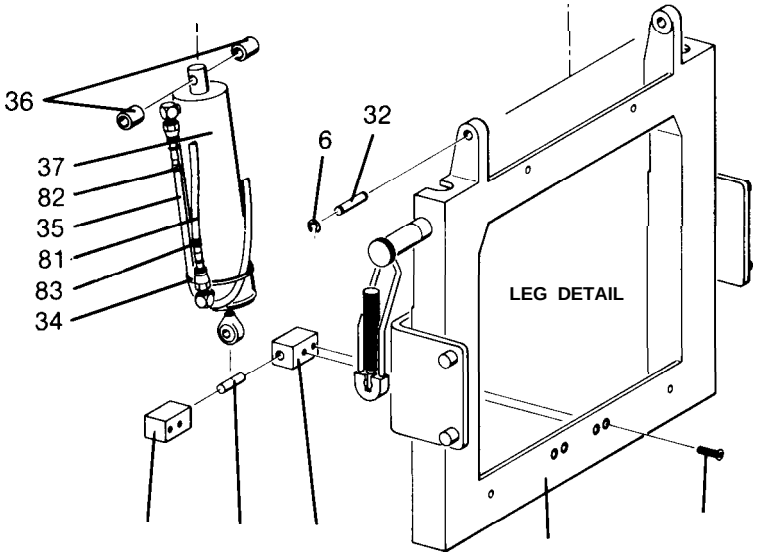
Back Section Cylinder Replacement

1. Stand at the head of the table and hold the cylinder with the hydraulic fittings to the right. Push the cylinder 7/16″ dia pin through the side of the mounting bracket, spacer (item 5), the cylinder cap end (item 4), spacer (item 5), the second side of the mounting bracket and secure with a 7/16″ lock ring (item 3).
2. Connect the hydraulic hoses before attachment. Hose (item 2) extends along the cylinder and is connected to the hydraulic fitting at the rod end of the cylinder. Hose (item 1) loops under the rod end of the cylinder and back along the cylinder to the hydraulic fitting at the cap end of the cylinder.
3. Attach a hose tie (item 9) midway on the cylinder, binding the three thicknesses of the hoses to the cylinder.
4. Lift the back section frame to the horizontal position.
5. Assemble the cylinder rod end bearing by pushing the pin through (item 8), mounting bracket, rod end bearing (item 6) mounting bracket and (item 8).
6. Secure the pin with the 3/8″ retaining ring (item 7).
7. Connect the table electrical supply cord and raise and lower the table to expel any air in the hydraulic system. Disconnect the cord.
8. Remove the power pack cover as outlined under Removal of Power Pack Cover H on page 29.
9. Check the hydraulic fluid level in reservoir as outlined under Hydraulic Fluid Level Check on page 30.
10 Assemble the power pack cover.
11. Connect the table electrical supply cord.
12. Lower the back section to the horizontal position and check to see if it is level with the seat section.
13. If the back section is not level, disconnect the table electrical supply cord and remove the cylinder rod end bearing as outlined under Back Cylinder Removal, step 6.
14. Loosen the bearing jam nut and turn the bearing clockwise or counterclockwise as required and tighten jam nut.
15. Secure the rod end bearing as outlined under Back Cylinder Replacement, steps 5 and 6.
16. Assemble the back/seat section cushions with wing nuts.

17. Assemble the cylinder cover, back section cover and head rest.

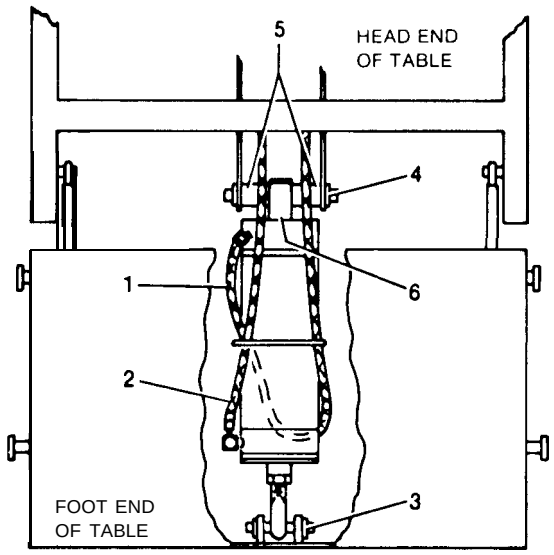
Leg Section Cylinder Removal

1. Raise the table to its maximum elevation.
2. Raise the leg section to the horizontal position and seat section to the fully tilted position.
3. Note position of the hoses and cut the hose tie to free the hydraulic lines from the cylinder.
4. Remove the 3/8" retaining ring (3) from the cylinder rod end bearing pin. (175, 8500, and 8800 Series).
5. Hold the leg section and push the bearing pin out of the mounting bracket and remove the cylinder rod end. Support the leg section with blocking while the cylinder is removed.
6. Lower the cylinder and let it hang from the seat section. 170 & 8700 Series — Remove (2) Allen head screws, remove cylinder mounting block, slide pin out of other block.



SEAT SECTION COMPONENTS
170, 8700 SERIES

7. Disconnect the two hydraulic hoses from the cylinder. Plug the hoses and cap the cylinder fittings to prevent hydraulic fluid spillage.
8. Remove the 7/16" retaining ring (item 3) from the cylinder cap end pin at the side of the mounting bracket.
9. Hold the cylinder and pull the pin out of the mounting bracket releasing spacers (item 5) and cylinder cap end mount



LEG SUPPORT HYDRAULIC CYLINDER

Leg Section Cylinder Replacement
175, 8500, 8800 Series

1. Hold the cylinder with the cap end in position in the bracket at the seat section and the hydraulic fittings to the left.
2. Grease the cylinder cap end pin lightly with chassis lubricant and insert the cylinder cap end pin through the side of the mounting bracket, spacer (item 5), cap end mount (item 6), spacer (item 5) and the other side of the mounting bracket.
3. Secure the pin with the 7/16" retaining ring (item 4).
4. Route the hydraulic hoses over the pin and attach to the cylinder hydraulic fittings. Hose (item 1) loops under the cylinder at the rod end of the cylinder and returns to the fitting at the cap end of the cylinder. Hose (item 2) extends along the cylinder to the fitting at the rod end of the cylinder.

5. Push the leg section electrical switch to the "up" position and fully extend the cylinder shaft.
6. Grease the cylinder rod end pin lightly with chassis lubricant and push the cylinder rod end pin through the mounting bracket, the rod end bearing and the other side of the bracket.
7. Secure the pin with the 3/8" retaining ring (item 3) 175, 8500, 8800 Series only- Reinstall pin and cylinder mounting blocks and (2) Allen head screws.

a. Attach hose tie midway on the cylinder, binding the three thicknesses of hoses to the cylinder.

9. Elevate and lower the leg section to expel trapped air from the hydraulic system.

Disconnect the table electrical *supply cord to prevent electrical shock.*

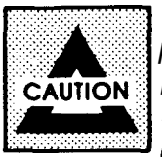
10. Remove the power pack cover as outlined under Removal of Lift Structure Panels on Page 28.
11. Check the hydraulic fluid level in the reservoir as outlined under Hydraulic Fluid Level Check on page 30.
12. Assemble the power pack cover.
13. Raise the leg section and check to see that it is level with the seat section.
14. If the leg section is not level with the seat section, disconnect the cylinder rod end bearing as outlined under Leg Section Cylinder Removal steps 4 and 5.
15 Loosen the cylinder rod end bearing jam nut and turn the bearing clockwise or counterclockwise as required and tighten the jam nut.
16 Secure the shaft rod end bearing as outlined under Leg Section Cylinder Replacement, step 6.

Tilt Cylinder Removal

In any step that requires connecting the table electrical power supply cord, disconnect the cord immediately upon completing the step to prevent electrical shock.

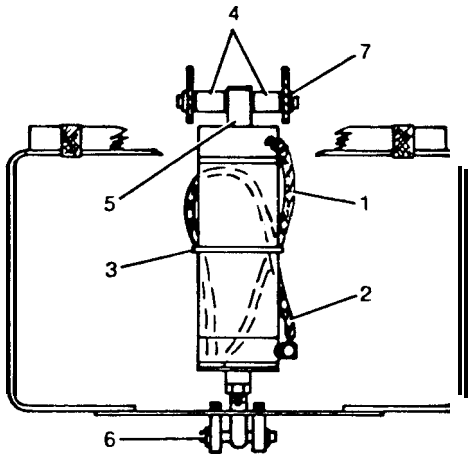
During the removal and replacement of the cylinder, the weight of the tab/e top will be resting on the mounting bracket for panel C. To prevent distortion of the bracket attach a 1" x 2" x 74" wood strip to the bracket with "C" clamps, vise grip pliers or heavy tape.

1. Remove the seat cushion which is secured with four wing nuts on the underside of the cushion. .
2. Fold the seat cushion over onto the back section cushion.
3. Remove the lift structure panels A, B, and C as outlined under Removal of Lift Structure Panels on page 28.
4. Place the 1" x 2" wood strip on top of the mounting bracket from which panel C was removed. Secure the strip with "C" clamps, vise grip pliers or heavy tape.
5. Remove the 3/8" retaining ring (item 6) from the rod end of the cylinder pin.
6. Slide rod end bearing pin out a sufficient distance to release rod end bearing.
7. Remove the 7/16" retaining ring (item 7) from the cylinder cap end pin.



When removing cylinder cap end pin, spacers must be hand held to prevent them from falling into the lift structure and damaging components.

8. Push the pin through the side of the bracket and remove the first spacer (item 4).
9. Push the pin through the cylinder cap end (item 5), second spacer (item 4), and second side of the cylinder mounting bracket.



TILT HYDRAULIC CYLINDER

10. Note the position of the hoses and cut the wrap that secures them to the cylinder.
11. Disconnect hydraulic hoses to release the cylinder. Plug hoses and cap cylinder hydraulic fittings to prevent hydraulic fluid spillage.

Tilt Cylinder Replacement

1. Insert the cylinder through seat section frame with the rod end down and hydraulic fittings toward the back support section of the table. Hose (item 1) extends down the back side of the cylinder and then down alongside hose (item 2) at the side of the cylinder.
2. Connect the hydraulic hose (item 1) to the fitting at the cap end of the cylinder and hose (item 2) to the fitting at the rod end of the cylinder.
3. Place a hose tie (item 3) above the cylinder rod and hydraulic fitting between hose (item 2) and the cylinder. Fasten the hose tie around the cylinder and the two hose thicknesses at the side of the cylinder, securing the hoses.
4. Insert the pivot pin through the side of the mounting bracket, spacer (item 4), cylinder cap end, spacer (item 4) and second side of bracket. Secure the pin with the 7/16″ lock ring.

Check that the hydraulic hoses from the leg support cylinder are above the tilt cylinder cap end pin to prevent damage to the leg cylinder hoses.

5. Push the cylinder rod end bearing pin through the cylinder rod end bearing and the other mounting block. Secure the pin with the 3/8″ retaining ring.

Do not lower seat frame to contact wooden blocks which could damage the panel mounting bracket.

6. Connect the table electrical supply cord and tilt and lower table seat section to expel trapped air from the hydraulic system. Disconnect the table electrical supply cord to prevent electrical shock.
7. Remove the power pack cover H as outlined under Removal of Lift Structure Panels on page 29.
8. Check the hydraulic fluid level in the reservoir as outlined under Hydraulic Fluid Level Check on page 30.
9. Assemble the power pack cover.
10. Connect the table electrical power supply cord. Check that the seat section cylinder is in the fully retracted position, and the seat section is level. Disconnect the table electrical supply cord.
11. If seat section is not level, adjust the cylinder shaft as follows:
    a. Remove the cylinder rod end bearing as outlined under Tilt Cylinder Removal, steps 5, 6, & 7.
    b. Release the rod end jam nut.
    c. Turn the rod end bearing clockwise or counterclockwise as required to level the table.
    d. Tighten the rod end jam nut.
12. Secure the rod end bearing with pin as outlined under Tilt Cylinder Replacement steps 5 & 6.

13. Connect the table electrical supply cord. Check that the seat section is level.
14. Remove the 1" x 2" wood strip from panel C mounting bracket and replace panels A, B and C.
15. Turn the seat cushion down onto the seat frame and secure it with the four wing nuts.

HYDRAULIC HOSES

Hydraulic hoses are furnished in the required lengths with connectors on each end. The ends are plugged to preserve internal cleanliness until they are assembled.

HYDRAULIC FITTINGS

Hydraulic fittings are provided for connecting the hydraulic hoses to the pump, cylinders, and the manifold. Fittings on replacement pumps, cylinders and manifolds are capped to preserve cleanliness until the hoses are attached.

When installing a hydraulic fitting or connecting a hose to a hydraulic fitting, do not apply excessive force which could result in fluid leakage at the fitting.

MANUALLY OPERATED SWITCHES

The manually operated switches on each side of the back section must be serviced from the inside of the frame. A switch is replaced by removing it from the switch mounting plate that is attached to the outside of the frame.

Disconnect the table electrical power supply cord to prevent electrical shock.

Removal

1. Remove the back section cover as outlined under Back Section Cover Removal on page 29.
2. Lift theswitch retaining clip and remove the switch.
3. Disconnect the wire connector assembly.

Replacement

1. Connect the replacement switch assembly.
2. Snap the switch into the retaining clips.
3. Connect the table electrical power supply cord and operate the switch. When the switch actuator is pushed upward, the table section should move upward. When the actuator is pushed downward, the table section should move downward. If the movement is reversed, disconnect the table electrical power supply cord and invert the switch.
4. Assemble the back section cover.

PORTABLE FOOT CONTROL

Instructions for installing a portable foot control on a table accompany the Portable Foot Control Package. The instructions that follow are for making repairs and transferring the supply cord to the opposite end of the foot control.

Portable Foot Control Cord Replacement

Disconnect the table electrical power supply cord to prevent electrical shock.

1. Remove the base cover plate from the foot end of the table base plate which is secured with two Phillip's flat head screws.
2. Disconnect the wire connectors.
3. Disconnect the cord GREEN/YELLOW grounding wire from'the grounding stud.
4. Remove the strain relief clamp from the molded plug.
5. Pull the cord inward until theentire molded end of the cord is inside the base plate. Lift the cord out of the keyhole slot.

FOOT OPERATED SWITCHES 175, 8525, 8550, 8600 SERIES

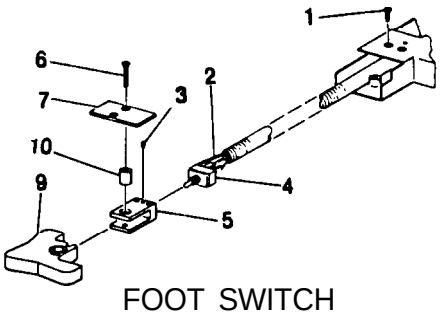
Removal

Disconnect the table electrical supply cord to prevent electrical shock.

1. Remove the base cover secured with two Phillips flat head screws.
2. Remove the flat head screws (items 1) from the base plate and pull the switch out of the base plate.
3. Disconnect the switch wire connectors (item 2).
4. Remove the flat head screw (item 6) from the actuator assembly plate (item 7) that secures the actuator (item 9).
5. Loosen the Allen set screw (item 3) that secures the switch (item 4) to the switch actuator mounting bracket (item 5) and unscrew the switch.

Replacement

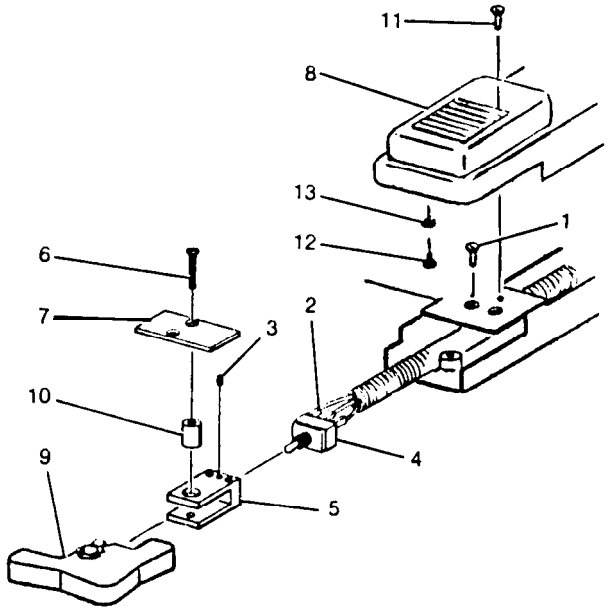
1. Screw the replacement switch into the switch mounting bracket until the space between the switch and the mounting bracket is 3/16" (3/16" of the switch thread is visible). Tighten the Allen set screw.
2. Connect the switch wire connectors.
3. Add lubricating oil to the switch actuator bearing (item 10) and reassemble with the slotted flat head screw and mounting plate.
4. Push the switch wires into the base plate and secure the switch assembly with the two flat head screws.
5. Assemble the base cover with the two Phillip's head screws.



FOOT SWITCH

FOOT OPERATED SWITCHES 170, 8700 SERIES ONLY

The lower foot operated switches on the table base control tilting of the table. The upper treadle operated foot switches control table elevation.



FOOT SWITCHES

Base Cover Removal

Disconnect the table electrical supply cord to prevent electrical shock.

Remove the base cover which is secured with two Phillip's head screws. Slide the foot treadles (item 8) outward to expose the securing screw (item 11) under each treadle.

Tilt Foot Switch Replacement

1. Remove the flat head screws (items 1) from the base plate and pull the switch out of the base plate.
2. Disconnect the switch wire connectors (item 2).
3. Remove the flat head screw (item 6) from the actuator assembly plate (item 7) that secures the actuator (item 9).

4. Loosen the Allen set screw (item 3) that secures the switch (item 4) to the switch actuator mounting bracket (item 5) and unscrew the switch.
5. Screw the replacement switch into the switch mounting bracket until the space between the switch and the mounting bracket is 3/16″ (3/16″ of the switch thread is visible). Tighten the Allen set screw.
6. Connect the switch wire connectors.
7. Add lubricating oil to the switch actuator bearing (item 10) and reassemble with the slotted flat head screw and mounting plate.
8. Push the switch wires into the base plate and secure the switch assembly with the two flat head screws.
9. Assemble the base cover with the two Phillip's head screws.

Elevation Foot Switch Replacement

1. Remove the two screws (item 12) and washers (item 13) to release the treadle foot switch assembly (item 8).
2. Replace the treadle foot switch assembly as a unit.

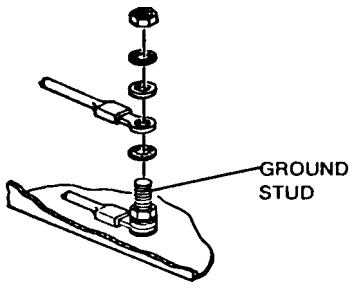
OPTIONAL PORTABLE FOOT CONTROL STANDARD 175, 8500, 8800 SERIES

Instructions for installing a portable foot control on a table accompany the Portable Foot Control Package. The instructions that follow are for making repairs and transferring the supply cord to the opposite end of the foot control.

Portable Foot Control Cord Replacement

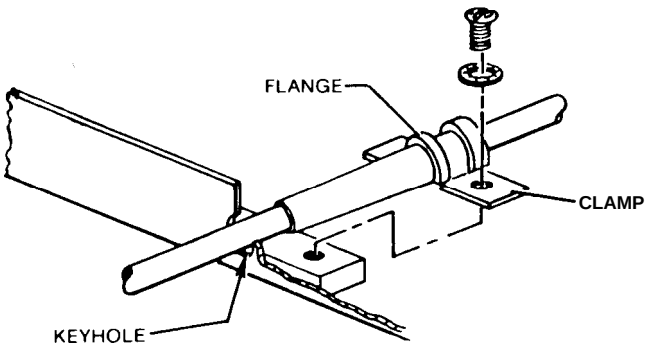
Disconnect the table electrical **power** *supply cord to prevent electrical shock.*

1. Remove the base cover plate from the foot end of the table base plate which is secured with two Phillip's flat head screws.
2. Disconnect the wire connectors.
3. Disconnect the cord GREEN/YELLOW grounding wire from the grounding stud.
4. Remove the strain relief clamp from the molded plug.
5. Pull the cord inward until theentire molded end of the cord is inside the base plate. Lift the cord out of the keyhole slot.
6. Invert the foot control on a padded surface to protect the printed symbols on the shield.
7. Remove the base plate from the foot control which is secured with six flat head screws.
8. Disconnect the four foot switches.
9. Disconnect the cord GREEN/YELLOW grounding wire and hose ties from the studs by removing the hex head nuts and washers.



GROUND DISASSEMBLY

10. Remove the strain relief clamp which is secured with hex nuts and lock washers.
11. Place the replacement cord in position with the flange on the molded section on the left end of assembly plate.
12. Position the strain relief clamp over the molded section of the cord and secure it to the studs with lock washers and steel hex head nuts.
13. Bolt GREEN/YELLOW grounding wire to left wire mounting post in the following sequence:
    a. Brass lock nut against plate
    b. Grounding wire terminal
    c. Brass flat washer
    d. Brass lock washer
    e. Brass lock nut



CORD CLAMP

14. Tighten the lock nut.
    a. Wire tie
    b. Brass lock washer
    c. Brass lock nut
15. Tighten the lock nut.
16. Check that the GREEN/YELLOW grounding wire from the leg section switch is securely connected to the center post in the bottom plate.
17. Connect wire tie on center post in the following sequence:
    a. Wire tie
    b. Brass lock washer
    c. Brass lock nut
18. Tighten the lock nut.
19. Connect the wire tie on the right hand post onto the bottom plate in the following sequence:
    a. Wire tie
    b. Brass lock washer
    c. Brass lock nut
20. Tighten the lock nut.
21. Connect the switch wire connectors in the following sequence from left to right:
    a. BROWN to back section switch
    b. YELLOW to table LIFT switch
    c. ORANGE to table TILT switch
    d. WHITE to leg section switch
22. Assemble the bottom plate, with the six flat head screws.
23. Position the foot control switch right side up on the floor near the table.
24. Place the cord in the keyhole slot in foot end of table base plate, with molded section inside the table base plate.
25. Place the strain relief clamp between the two flanges on the molded plug and pull cord out through keyhole slot until the mounting holes in the clamp align with the threaded holes in the base plate.
26. Assemble the strain relief clamp with the two slotted pan head screws and lockwashers.
27. Assemble the two cord wire connectors.
28. Connect the cord GREEN/YELLOW ground wire to the same ground post to which the table internal GREEN/YELLOW ground wires are connected.
29. Assemble the base cover plate.

Portable Foot Control Switch Replacement

Disconnect the tab/e electrical power supply cord to prevent electrical shock.

1. Invert the foot control on a padded surface to protect the printed symbols on the shield.
2. Remove the base plate from the foot control which is secured with six flat head screws.
3. Disconnect the wire connector from the defective switch.
4. Remove the two slotted head screws and lock washers from the switch.
5. Secure the replacement switch with the two lock washers and slotted head screws.
6. Connect the switch wire connectors.
7. With all wires lying “flat”, replace the foot control base plate with the six slotted flat head screws.

Portable Foot Control Supply Cord Transfer

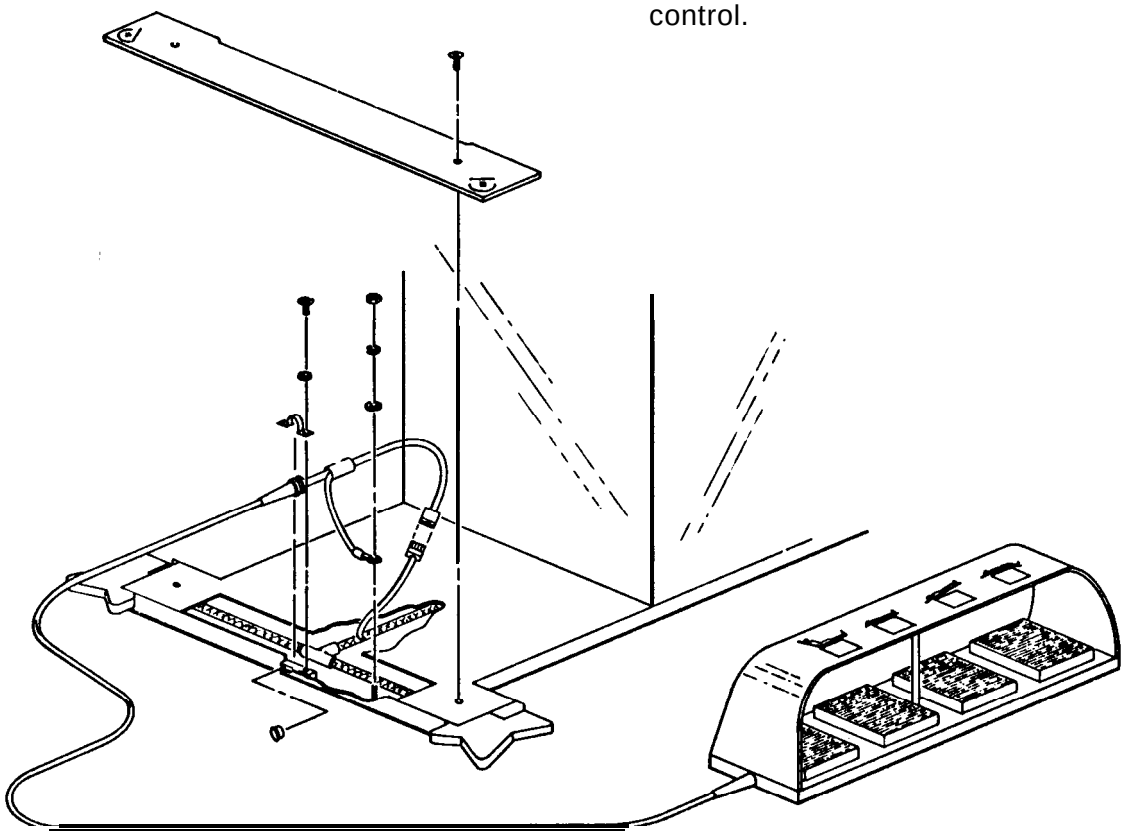
The following instructions are for transferring the power supply cord from the left to the right end of the portable foot control.

Disconnect the table electrical power supply cord to prevent electrical shock.

1. Remove the two Phillip's head screws that secure the "caution" plate to the right end of the foot control and set the "caution" plate aside.
2. Remove the two flat head screws from the left end of the foot control and insert them securely into the two holes where the Phillip's head screws were located.
3. Temporarily insert the Phillip's head screws into the two holes where the flat head screws were located.
4. Turn the foot control on its side and remove the six flat head screws that secure the base plate.
5. Separate the base plate from the foot control which is secured with six flat head screws.

The electrical wire harness is secured to three threaded posts on the base plate. For instructional purposes the post nearest the point of entry of the power supply cord will be referred to as post number 1. The center post as number 2. The remaining post as number 3.

6. Cut the cable tie that binds the main power supply cord to the back and lift the branch cord located between posts 1 and 2.
7. Remove the hex nut, lockwasher, and harness tie from post number 3 and assemble the hex nut and lockwasher. Leave the unsecured harness tie around tilt and leg branch cord.
8. Remove the hex nut, lockwasher, and harness tie from post number 2 and rotate 180" so that the point of entry of the power supply cord is at the right end of the foot control.



PORTABLE FOOT CONTROL REPLACEMENT

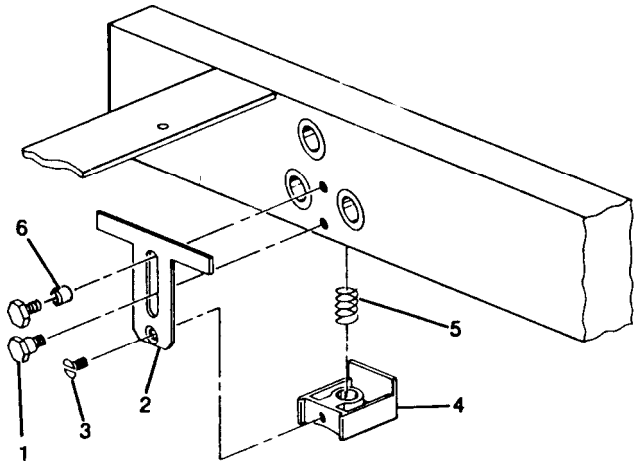
9. Assemble the hex nut, lockwasher, and harness tie onto post number 2 so that it matches the direction of the harness tie on post number 1 which is now at the right end of the foot control.
10. Secure the main power supply cord to the tilt and leg branch cord halfway between post 1 and 2 with a new cable tie.
11. Reassemble the base plate to the foot control with the six flat head screws.
12. Turn the foot control right side up and remove the two Phillip's head screws from the left end of the foot control.
13. Secure the "caution" plate to the left end of the foot control with the two Phillip's head screws.
14. Connect the table supply cord and test the portable foot control switches.

ACCESSORY LOCKS

Back Section Accessory Lock

Replacement of Coil Spring

1. Remove the back cover from the back section as outlined on page 29.



BACK SECTION ACCESSORY LOCK

2. Remove the two hex head mounting posts (items 1) and sleeves (item 6) by unscrewing the posts from the back section frame, thus releasing locking plate (item 2) and assembly.
3. Loosen the flat head screw (item 3) from the lock actuator knob (item '4).
4. Replace the fatigued spring (item 5) and tighten the flat head screw (item 3).
5. Assemble the lock with the two hex head posts (items 1) and sleeves (item 6).

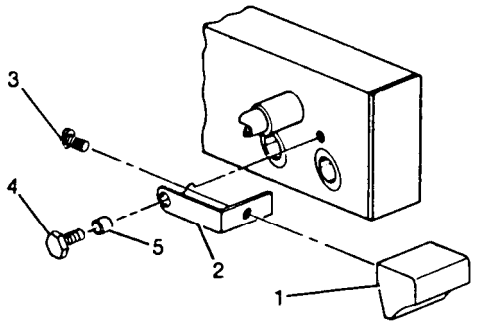
Seat Section Accessory Lock

Removal of Actuator Knob

1. Remove the lock assembly by unscrewing post (item 4) with sleeve (item 5).
2. Remove the screws (item 3) from the knob (item 1).

Replacement of Actuator Knob

1. Insert the screw (item 3) through the lever (item 2) and thread intoactuator knob (item 1). Tighten screw.
2. Assemble the lock assembly to the table with post (item 4) and sleeve (item 5).



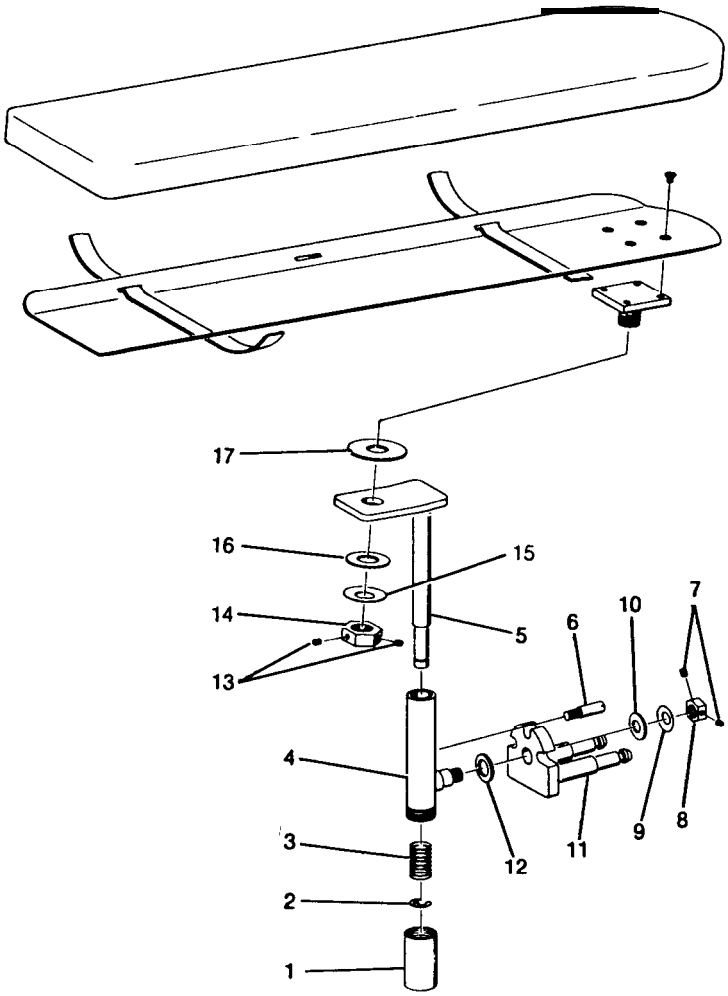
SEAT SECTION ACCESSORY LOCK

ARMBOARD ASSEMBLY

The armboard is mounted on a pivot that permits rotation to various positions in a horizontal plane. The pivot assembly is attached to a post assembly that is secured to the plug-in mounting bracket. The mounting bracket is notched at three points so it can be tilted to two positions at either side of the table. The armboard can be tilted by pulling upward on the post and moving it forward to the desired notch.

Armboard Post Disassembly

The following disassembly procedure is provided for reference when replacement of a part is required. Whenever service is performed, the post (item 5) and column assembly (item 4) must be checked to assure that there is adequate grease on the post.



ARMBOARD ASSEMBLY

1. Remove the threaded cap (item 1).
2. Remove the lock ring (item 2) from the post (item 5).
3. Remove the coil spring (item 3).
4. Remove indexing pin (item 6) from post (item 5).
5. Remove column assembly (item 4) from the post (item 5).
6. Loosen the two nylon tipped set screws (items 7) from the lock nut (item 8).
7. Remove the beveled washer (item 9), flat washer (item 10), pivot block (item 11) and washer (item 12) secured with lock nut (item 8).
8. Reassemble in reverse order of removal.

Armboard Pivot Disassembly

1. Loosen the two nylon tipped screws (item 13) in lock nut (item 14).
2. Remove the beveled washer (item 15), flat washer (item 10), post assembly (item 5) and friction disc (item 17).
3. Reassemble in reverse order of removal.

Armboard Tension Adjustments

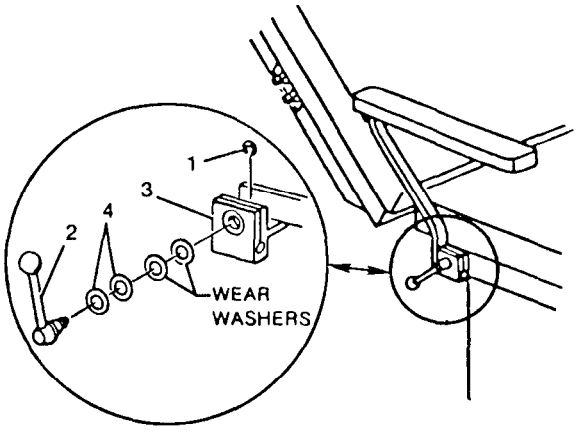
Two tension adjustments are required on the armboard assembly. In each case, a beveled washer immediately under the hex lock nut with the beveled surface pressing against the nut, provides the tension.

Column Pivot Plate Tension Adjustment

1. Loosen the two nylon tipped set screws (items 7) in the hex lock nut (item 8).
2. Tighten the nut until adequate friction pressure is achieved. The armboard column assembly should not rotate freely when the armboard is raised and the column stop stud (item 6) is released from the pivot plate. If adequate tension is not achieved, remove the lock nut (item 8) and replace the beveled washer (item 9).
3. Reassemble the lock nut and tighten.
4. Tighten the nylon tipped set screws (items 7).

Armboard Pivot Tension Adjustment

1. Loosen the two nylon tipped set screws (items 13) in the hex lock nut (item 14).
2. Tighten the nut until adequate friction pressure is achieved. Thearmboard should hold in any position to which it is moved and not rotate freely. If adequate tension is not achieved, remove the lock nut and replace the beveled washer (item 15).
3. Reassemble the lock nut and tighten.
4. Tighten the nylon tipped set screws (item 13).



ARM REST LOCKING LEVER

ARM REST LOCKING LEVER ADJUSTMENT

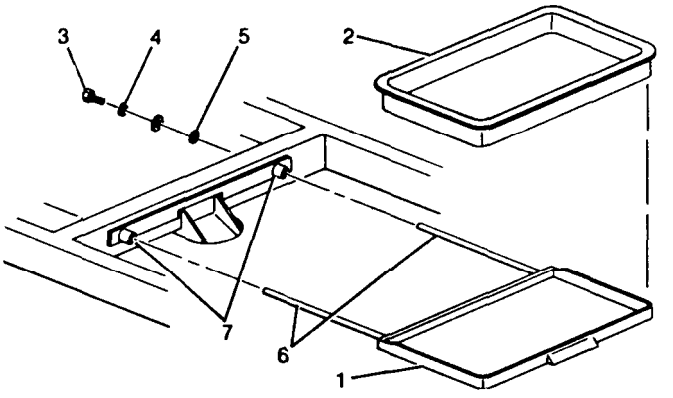
When tightened by turning clockwise, the lock lever should be 30” below horizontal and pointing toward the head end of the table. Adjustment can be made as follows:

1. Remove the lock ring (item 1) from the end of the shaft.
2. Unscrew the lever (item 2) from the mounting block (item 3).
3. Add or remove spacers (item 4) to provide the specified adjustment and reassemble the lock ring (item 1).

DRAIN PAN CARRIAGE REPLACEMENT

Removal

1. Move the table leg section to the down position.
2. Pull out the carriage (item 1) and remove the drain pan (item 2).
3. Tilt the seat section of the table upward for access to the carriage assembly.
4. Remove the screws (items 3), washers (items 4), and o-rings (items 5) from the travel rods (items 6), on the back side of the mounting plate.
5. Remove the carriage by sliding the carriage travel rods out of the bearings (items 7) on the mounting plate.



DRAIN PAN CARRIAGE REPLACEMENT

LIFT STRUCTURE LINK ASSEMBLY

Upper Lift Link Slide Pad Replacement (Under the Manifold)

Removal

1. Remove outer panels A, B, D, and F as outlined under Lift Structure Panels on pages 28 and 29.
2. Connect the safety link locking bar as outlined under Safety Link Locking Bar Assembly on page 31.

Disconnect the table electrical supply cord to prevent electrical shock.

3. Remove the hex bolts and spacers from the bottom of the manifold.
4. Remove the slide pad guide which is secured with two hex head bolts and lock washers.
5. Pry the slide pad from the post on the top link.

Replacement

1. Push the slide pad onto the post in the top link.

2. Using a wrench on the flat surfaces of the pad, turn pad to place the flat surfaces in a horizontal position.
3. Place the slide pad guide in position on the slide pad and assemble it loosely to the table frame, with the two hex head bolts.
4. Loosen the two hex head bolts in the slide pad guide at the opposite side of the table.
5. Place a "C" clamp on each slide pad guide with the "C" clamp on the inside and the outside of the top link of the lift structure. Tighten the "C" clamps to align the slide pad guides. Secure the slide pad guides by tightening the four hex head bolts and lock washers. Remove the "C" clamps.
6. Reassemble the manifold to the table frame with two hex head bolts and spacers.
7. Reassemble the outer panels A, B, D and F.

Upper Lift Link Slide Pad Replacement (Opposite From Slide Pad Under Manifold)

Removal

To remove the slide pad at the top link on the opposite side of the lift structure from the manifold, follow the instructions outlined under Upper Lift Link Slide Pad (Under the Manifold) Removal except step 3. Loosen the slide pad guide under the manifold and remove the slide pad guide at the opposite side of the table. Pry the slide pad from the post on the top link.

For replacement, follow the instructions outlined under Upper Lift Link Slide Pad (Under the Manifold) Replacement.

Lower Slide Pads Replacement

The table top and lift link assembly must be removed from the table for access to the slide pads on the bottom links of the lift link assembly.

1. Remove the table top as outlined under Table Top Removal on page 60.
2. Remove the lift link assembly as outlined under Lift Link Assembly Removal on page 61.
3. Pry the slide pads from the posts on the bottom I inks.
4. Reassemble all components in reverse order of removal.

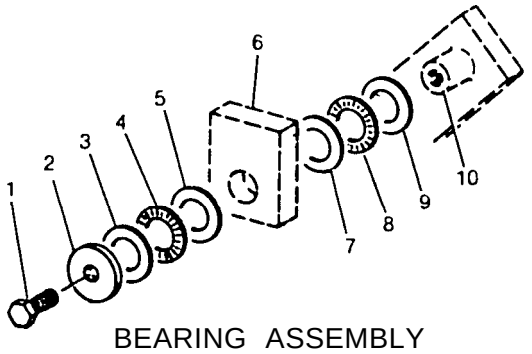
Link Assembly Bearings Replacement

Twelve locations on the link assembly employ needle bearing assemblies. The two bearing assemblies at the upper intersection of the links, one at each side of the structure, are retained with Allen screws. These two bearings are press fit in place and can not be serviced in the field.

The other ten thrust bearings can be replaced in the field. They are easily identified by the hex head bolts that retain them.

Removal

1. Remove the lift structure panels as outlined under Lift Structure Panels on page 28.
2. Release the bearings assembly retained by the hex head bolt (item 1).



BEARING ASSEMBLY

Replacement

1. Coat the threads on the plated hex head bolt (item 1) with LOCKTITE H/S primer or equivalent.
2. Lubricate the needle thrust bearings with light grease and replace the bearing assembly in the following sequence.

   a. Hex head bolt (item 1)

   b. Pivot pin cap (item 2)

c. 1/16″ thick thrust washer (item 3)

d. Needle thrust bearing (item 4)

e. 1/32″ thick thrust bearing race (item 5)

f. Insert bolt through link or mounting block (item 6) depending on location of bearing being serviced.

g. 1/32″ thick thrust bearing race (item 7)

h. Needle thrust bearing (item 8)

i. 1/32″ thick thrust bearing (item 9)

j. Apply LOCKTITE 271 sealant or equivalent, to the primed threads of the plated hex head bolt.

k. Insert the hex head bolt into the threaded pivot pin and torque to 10 foot pounds pressure.

3. Reassemble the table top, and lift structure panels in reverse order of removal.

TABLE TOP
Removal

Removal and replacement of the table top requires two people.

Electrical power is required for some of the disassembly steps. When not positioning tab/e sections, disconnect the tab/e electrical power supply cord to prevent electrical shock.

1. Remove all attached accessories.
2. Remove all lift structure panels as outlined under Lift Structure Panels on page 28.
3. Remove the back section cover as outlined under Back Section Cover Removal on page 29.
4. With the table tilted, remove the four wing nuts from the underside of the back/seat cushion and set aside.
5. Return the table to the horizontal position.
6. Raise the table to maximum elevation and secure the safety link locking bar as outlined under Safety Link Locking Bar Assembly on page 31.

Disconnect the tab/e electrical power supply cord to prevent electrical shock.

7. Disconnect the wiring harness connectors located at the right end of the hydraulic manifold. From the opposite side of the lift structure, pull the harness through the holes in the top of the lift structure.
8. Release the two clips holding the wire harness to the panel C support bracket and lay harness on the floor.
9. Lift the bundled hydraulic hoses off the pulley below the hydraulic manifold.
10. Remove the hose clamp assembly at the base of the lift structure which is retained by two hex head bolts and spacers.
11. Place pads on the floor on the manifold side of the lift structure.
12. Remove the four hex head bolts and lock washers from the mounting blocks on the top link (two on each outer edge) toward the foot end of the table.
13. With a person on each side of the table, lift the table top, sliding it toward the head end of the table until the slide pad guides attached to the table top assembly are free of the slide pads on the top link.
14. Turn the table top 90° and lay it with the side edge down onto the pads on the floor.

Replacement

Whenever the table top is removed, alignment of the top slide pad guides is required.

1. Remove the two hex head bolts and spacers from the bottom of the manifold.
2. Remove the two slide pad guides secured with four hex head bolts and lock washers from the table top assembly.

3. Lift the table top carefully into position. Secure the table top to the two mounting blocks at the end of the link toward the foot end of the table with the four hex head bolts and lock washers.
4. Position the slide pad guides on the slide pads at both sides of the table.
5. Insert the four hex head bolts through the table top mounting frame into the slide pad guides. Do not tighten the bolts.
6. To align the slide pad guides, use a "C" clamp on each guide. Position the "C" clamp on the inside of the slide pad guide and on the outside of the top link of the lift structure and tighten the clamp. Tighten the four hex head bolts in the slide pad guides and remove the "C" clamps.
7. Reassemble the manifold to the table mounting frame with the two hex head bolts and spacers.
8. Reassemble the table components in reverse order of removal.

LIFT LINK ASSEMBLY REMOVAL & REASSEMBLY

Removal

1. Remove the lift structure panels, and back section cover as outlined on page 28.
2. Remove the table top as outlined on page 60.

With the table top removed and the safety link locking bar secured, wrap soft padding material around the lift cylinder rod to prevent denting or scratching the shaft and protection from fluid leakage.

3. Remove the two cylinder trunnion blocks secure with two hex head bolts and lock washers.
4. Release the wiring harness from the clip at the side of the lift link assembly.
5. Remove the hose guide bracket from the table platform, (secured with two screws) for clearance to slide the lift link assembly out of the foot end of the table.
6. Remove the link assembly mounting blocks from the base platform assembly secured with two hex head bolts and lock washers.
7. With one man at each side of the table, carefully lift the link assembly and slide it toward the foot end of the table base. Make certain the lift cylinder is not damaged in the process. When the slide pads at the bottom of the assembly are released from the slide pad guides, set the link assembly on the floor outside the table base.

Reassembly

1. Remove the slide pad guides which are secured with flat head bolts, hex nuts and lock washers to the table base platform.
2. Position the slide pad guides on the slide pads of the lift link assembly.
3. Unscrew the 1/4" hex head screw that secures the angle bracket to the platform a sufficient distance to permit assembly of the slide pad guides to the platform base.
4. Lift the link assembly carefully into position into the table base to prevent damage to the lift cylinder.
5. Assemble the bolts, washers, and nuts to the guide mounting holes toward the head end of the table.
6. Release the safety locking bar and raise the lift link assembly a sufficient distance to permit assembly of the remaining bolts, washers, and nuts to the slide pad guides.
7. Reassemble the safety locking bar and tighten all hex head bolts and screws.
8. Position "C" clamps, one at each side of the assembly, to align the slide pad guides. The "C" clamps are used to hold the slide pad guides to the table base frame while the slide pad guides are secured with flat head bolts, lock washers and hex nuts.
9. Remove the two "C" clamps.
10. Complete reassembly of the table in reverse order of removal.

TABLE ROTATION UNIT — MODELS 175, 8525 & 8800 ONLY

The table rotation unit is a factory installed option.

Foot Lock/Release Lever Adjustment

The lock/release lever is designed to lock when pushed clockwise to a position 20" beyond perpendicular to the side of the table base.

1. Remove panels B and F as outlined under Lift Structure Panels on pages 28 and 29.
2. Remove the hex head screw (item 1) and washer (item 2) from the top of the lock/release lever assembly. Remove the lock ring (item 5) from the splined stud (item 4).
3. Lift the lever (item 3) upward to disengage it from the splined stud (item 4). Rotate the lever counterclockwise as required and replace on the splined stud. Test the locking action. Readjust if required.

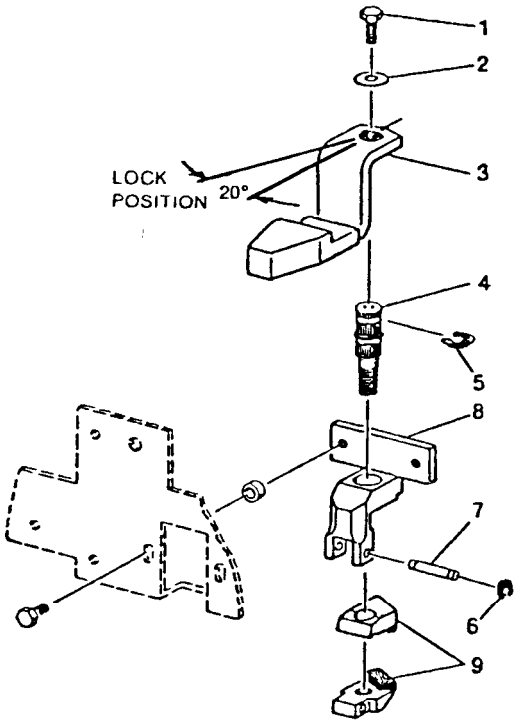


TABLE ROTATION UNIT

4. When adjustment is satisfactory, insert the hex head screw with the flat washer through the lever into the splined stud and tighten.
5. Replace panels B and F.

Brake Clamp Pads

Replacement

Brake pads are pre-assembled to the clamp assembly.

1. Remove panels B and F as outlined under Lift Structure Panels on pages 28 and 29.
2. Remove the retaining ring (item 6) from the pivot pin (item 7) in the lock weldment (item 8).
3. Push the pivot pin from the lock weldment.
4. Remove the hex head screw and washer from the foot lock/release lever and lift the lever from the splined stud.
5. Unscrew the splined stud (item 4) from the clamp assembly (item 9). The clamp assembly will now fall free.
6. Replace the two clamp assembly jaws (item 9) as follows:
   a. Hold the clamp assembly in position in the lock weldment (the unthreaded jaw on top of the rotation disc, the threaded jaw under the rotation disc.)
   b. Insert the splined stud from the top and screw into the bottom jaw.
   c. Insert the pivot pin (item 7) into the lock weldment (item 8) and secure with the retaining ring (item 6).
   d. Set the foot lock/release lever on the splined stud for the desired braking action.
   e. Insert the hex head screw with washer into the splined stud and tighten.
7. Replace panels B and F.

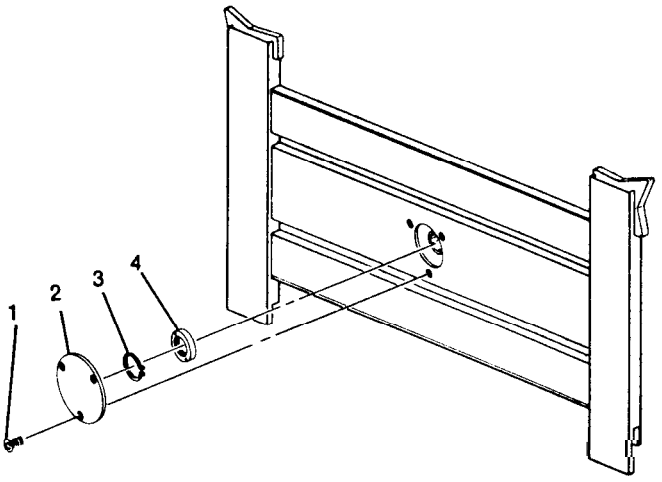
Rotation Shaft Nut Adjustment

To tighten the table rotation shaft nut, the floor anchoring devices must be removed and the table positioned on its side. This requires two men working in an open floor area 8' long and 8' wide. Two 4" x 4" wood blocks are required on the floor to support the table seat section frame when the table is positioned on its side. A special spanner wrench (P/N 507818) is required to tighten the nut.

1. Tilt table to the Trendelenburg (head end down) position and remove the four wing nuts from the underside of the seat section cushion.
2. Return the table top to the horizontal position and remove the back section cover as outlined under Back Section Cover Removal on page 29.
3. Remove the four wing nuts from the back section cushion and remove the back/seat section cushion from the table.
4. Make certain that all table sections are in the horizontal position.

Disconnect the table electrical supply cord to prevent electrical shock.

5. If the table has accessory rails, remove the table accessory mounting rail from the seat section frame on the side opposite from the rotation lock/release lever. Remove any accessories mounted on that side of the table frames.
6. Remove the power pack cover and panels B and F as outlined under Removal of Lift Structure Panels.
7. Turn the pump reservoir fill/vent plug down tightly to prevent oil spillage.
8. Remove the two base cover panels at the head and foot ends of the base plate which are secured with two Phillips flat head screws.
9. Move the portable foot control to a position where it will not be under the table when the table is turned on its side.
10. Remove the four floor anchor bolts, two from the head end and two from the foot end of the table base plate.
11. Place two 4" x 4" x 4" wooden blocks in position on the floor where the side of the seat section frame will be lowered. Place covering on floor to protect floor.
12. Move the lock/release lever to lock the table.
13. With a person standing on each side of the table, tip the table up toward the side opposite the lock/release lever until reaching a balancing point. Then with both people on the downward side, lower the table down onto the wood blocks, being sure the wood blocks are in contact with the side of the steel seat section frame.
14. Remove the three flat head screws (item 1) from the circular base plate (item 2), and remove the plate.
15. Remove the retaining ring (item 3) from the shaft.
16. Insert the spanner wrench into the two holes in the rotation shaft locking nut (item 4) and break thread sealant by turning nut counterclockwise. If necessary, strike the wrench handle with a rubber mallet.
17. After the nut has been loosened, add fresh thread sealant and tighten the nut firmly with the spanner wrench.



ROTATION SHAFT NUT ADJUSTMENT

18. Assemble locking ring (item 3) and circular base plate (item 2), and flat head screws (item 1).
19. Lift the table to its upright position by two people lifting from the bottom side of the seat section frame until reaching the balancing point. Then one person move to locking lever side of table and lower the table carefully down onto the floor.
20. Check the table rotation for smoothness of , motion.
21. Open pump reservoir plug two full turns to provide required ventilation.
22. Reassemble components as follows:
    a. Secure table anchor bolts at original location.
    b. Base plate covers
    c. Seat accessory rail
    d. Seat/back cushion with wing nuts
    e. Back section cover and paper roll tray
    f. Panels B and F
    g. Power Pack Cover H
    h. Any accessories that were removed

NOTES

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Ritter

Service Bulletin No. 013

SUBJECT: **Venting Hydraulic Fluid Reservoir**

MODEL: **170,175, and 176**

When installing or servicing a **Ritter Model 170, 175,** or **176 Table,** always make certain that the Hydraulic Reservoir is properly vented.

The system can contain one of two types of fill-vent plugs. The plug (A) in later models, Figure 1, has a vent hole pre-drilled in the vent plug and requires no further attention, since it is already vented.

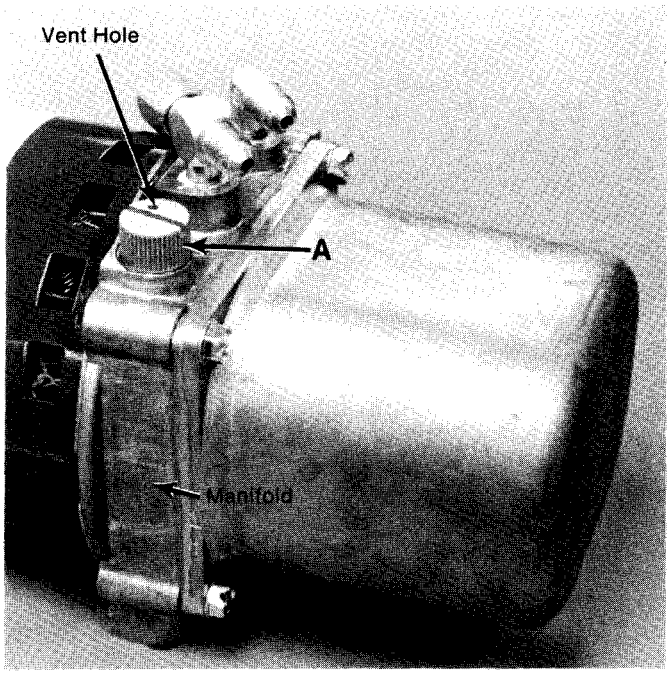

Figure 1. Location of Fill-Vent Plug with Vent Hole.

The earlier models that **do** require attention can be identified by a fill-vent plug that does **not** have a hole drilled in it, as shown in Figure 2. Also on these earlier units the plug is located directly on top of the reservoir. To properly vent the earlier model systems, turn the plug (B) clockwise in the reservoir threaded hole until it is snug or tight. Then, turn the fill-vent plug counter-clockwise 3 **full turns.** The table should only be operated when the vent plug is back out 3 turns from the snug position.

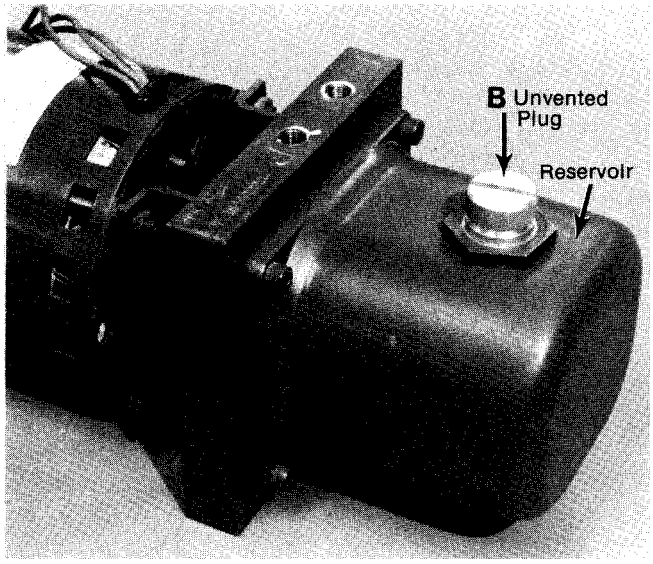

Figure 2. Location of Fill-Vent Plug on earlier model units without hole.

For access to the vent plug, it will first be necessary to remove the motor cover. Refer to the **service manual** for motor cover removal.

CAUTION

OPERATING THE TABLE UNVENTED COULD CAUSE DAMAGE TO THE HYDRAULIC SYSTEM.

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